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Ms. Christine Todd Whitman  
Administrator  
U. S. Environmental Protection Agency  
P. O. Box 1473  
Merrifield, VA 22116

FYI-02-001424

Dear Ms. Whitman:

The American Chemistry Council (Council) makes available to the public and appropriate government agencies final reports of environmental, health, and safety research that it manages. In keeping with this policy, the following final report that the Council's Brominated Flame Retardant Industry Panel (BFRIP) recently conducted is enclosed:

- Hexabromocyclododecane (HBCD): A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats.

This report does not include confidential information.

If you have any questions, please contact Wendy K. Sherman, the BFRIP Manager, at 703/741-5639 or via email [wendy\_sherman@americanchemistry.com].

Sincerely yours,

Elizabeth Festa Watson  
Managing Director, CHEMSTAR

Enclosure (4 volumes)

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## **FINAL REPORT**

Volume 1 of 4  
(Text and Summary Tables 1-68)

### **STUDY TITLE**

### **A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

### **STUDY DIRECTOR**

Christopher P. Chengelis, Ph.D., D.A.B.T.

### **STUDY INITIATED ON**

March 2, 2000

### **STUDY COMPLETION DATE**

December 14, 2001

### **PERFORMING LABORATORY**

WIL Research Laboratories, Inc.  
1407 George Road  
Ashland, Ohio 44805-9281

### **LABORATORY STUDY NUMBER**

WIL-186012

### **SPONSOR**

Chemical Manufacturers Association  
Brominated Flame Retardant Industry Panel (BFRIP)  
1300 Wilson Blvd.  
Arlington, VA 22209

WIL-186012  
CMA-BFRIP

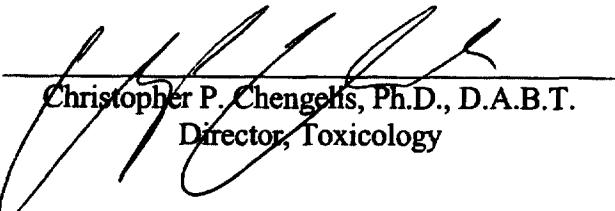
**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**COMPLIANCE STATEMENT**

This study, designated WIL-186012, was conducted in compliance with the United States Environmental Protection Agency (EPA) Good Laboratory Practice Regulations (40 CFR Part 792), the Organisation for Economic Cooperation and Development (OECD) Principles of Good Laboratory Practice [C (97) 186/Final], the standard operating procedures of WIL Research Laboratories, Inc., and the protocol as approved by the sponsor. Characterization of the test article was supplied by the sponsor (presented in Appendix A); it is unknown whether the characterization analysis was conducted according to Good Laboratory Practices.

The protocol was designed and the study was conducted in accordance with EPA OPPTS Guideline 870.3100 and the OECD Guidelines for Testing of Chemicals, Health Effects Test Guidelines, Section 408, adopted September 21, 1998.

Study Director:

  
Christopher P. Chengelis, Ph.D., D.A.B.T.  
Director, Toxicology

14 Dec 01

Date

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**TABLE OF CONTENTS**

<b>VOLUME 1</b>	<u>Page</u>
I. Summary	17
II. Objective	22
III. Study Design	23
IV. Experimental Procedures	24
A. Introduction	24
B. Test Article and Vehicle	24
1. Test Article Identification	24
2. Vehicle Identification	25
3. Preparation	25
4. Administration	25
5. Sampling and Analyses	26
C. Animal Receipt and Acclimation/Pretest Period	27
D. Animal Housing	27
E. Diet, Drinking Water and Maintenance	28
F. Environmental Conditions	28
G. Assignment of Animals to Treatment Groups	28
H. Clinical Observations and Survival (All Groups)	29
I. Body Weights (All Groups)	30
J. Food Consumption (Toxicology Groups)	30
K. Functional Observational Battery (Toxicology Groups)	30
1. Home Cage Observations	31
2. Handling Observations	31
3. Open Field Observations	31
4. Sensory Observations	31

<b>VOLUME 1 (continued)</b>	<u>Page</u>
5. Neuromuscular Observations	32
6. Physiological Observations	32
L. Locomotor Activity (Toxicology Groups)	32
M. Clinical Pathology (Toxicology Groups)	33
1. Hematology	33
2. Serum Chemistry	34
3. Urinalysis	34
4. Serum Hormones	34
N. Ophthalmic Examinations (Toxicology Groups)	34
O. Determination of Estrous Cycles (Toxicology Groups)	35
P. Anatomic Pathology (Toxicology Groups)	35
1. Macroscopic Examination	35
2. Organ Weights	37
3. Slide Preparation and Microscopic Examination	37
Q. Spermatogenesis Evaluations (Toxicology Groups)	38
1. Motility/Viability Assessment	38
2. Morphology Assessment	39
3. Enumeration of Epididymal and Testicular Sperm Numbers and Sperm Production Rate (SPR)	39
R. Determination of Test Article Fat Concentration (Satellite Groups)	39
S. Statistical Methods	40
T. Data Retention	40
V. Results	41
A. Clinical Observations and Survival (All Groups)	41
B. Body Weights (All Groups)	41
C. Food Consumption (Toxicology Groups)	41
D. Functional Observational Battery (Toxicology Groups)	42
1. Home Cage Observations	42

<b>VOLUME 1 (continued)</b>	<u>Page</u>
2. Handling Observations	42
3. Open Field Observations	42
4. Sensory Observations	42
5. Neuromuscular Observations	43
6. Physiological Observations	43
E. Locomotor Activity (Toxicology Groups)	43
F. Clinical Pathology (Toxicology Groups)	43
1. Hematology	43
2. Serum Chemistry	44
3. Urinalysis	47
4. Serum Hormones	47
G. Ophthalmic Examinations (Toxicology Groups)	49
H. Estrous Cycle Data (Toxicology Groups)	49
I. Anatomic Pathology (Toxicology Groups)	49
1. Macroscopic Examination	49
2. Organ Weights	50
3. Microscopic Examination	51
J. Spermatogenesis Evaluations (Toxicology Groups)	54
K. Determination of Test Article Fat Concentration (Satellite Groups)	54
VI. Discussion and Conclusions	56
VII. Key Study Personnel and Report Submission	59
VIII. Quality Assurance Unit Statement	61
IX. References	63
X. Deviations From the Protocol	64

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**INDEX OF TABLES**

<b>VOLUME 1 (continued)</b> (Summary Data)	<u>Page</u>
1. Summary of Survival and Disposition	66
2. Summary of Clinical Findings: Total Occurrence/No. of Animals (Detailed Physical Examinations/Dispositions)	68
2A. Summary of Clinical Findings: Total Occurrence/No. of Animals (Detailed Physical Examinations/Dispositions - Dosing Period)	75
2B. Summary of Clinical Findings: Total Occurrence/No. of Animals (Detailed Physical Examinations/Dispositions - Recovery Period)	82
3. Summary of Clinical Findings: Total Occurrence/No. of Animals (1-Hour Post-Dosing)	88
4. Summary of Clinical Findings: Total Occurrence/No. of Animals (Daily Observations - Recovery Period)	91
5. Body Weights (Grams) - Summary of Means	93
6. Body Weight Gains (Grams) - Summary of Means	101
7. Weekly Food Consumption (Grams/Animal/Day) - Summary of Means	109
8. Functional Observational Battery Summary Incidence - Home Cage Observations (Week -1 Pretest Evaluation)	117
9. Functional Observational Battery Summary Incidence - Home Cage Observations [%] (Week -1 Pretest Evaluation)	119
10. Functional Observational Battery Summary Incidence - Home Cage Observations (Week 12 Evaluation)	121

**VOLUME 1 (continued)**

	<u>Page</u>
11. Functional Observational Battery Summary Incidence - Home Cage Observations [%] (Week 12 Evaluation)	123
12. Functional Observational Battery Summary Incidence - Home Cage Observations (Week 16 Recovery Evaluation)	125
13. Functional Observational Battery Summary Incidence - Home Cage Observations [%] (Week 16 Recovery Evaluation)	127
14. Functional Observational Battery Summary Incidence - Handling Observations (Week -1 Pretest Evaluation)	129
15. Functional Observational Battery Summary Incidence - Handling Observations [%] (Week -1 Pretest Evaluation)	135
16. Functional Observational Battery Summary Incidence - Handling Observations (Week 12 Evaluation)	141
17. Functional Observational Battery Summary Incidence - Handling Observations [%] (Week 12 Evaluation)	147
18. Functional Observational Battery Summary Incidence - Handling Observations (Week 16 Recovery Evaluation)	153
19. Functional Observational Battery Summary Incidence - Handling Observations [%] (Week 16 Recovery Evaluation)	159
20. Functional Observational Battery Summary Incidence - Open Field Observations (Week -1 Pretest Evaluation)	165
21. Functional Observational Battery Summary Incidence - Open Field Observations [%] (Week -1 Pretest Evaluation)	169
22. Functional Observational Battery Summary Incidence - Open Field Observations (Week 12 Evaluation)	173
23. Functional Observational Battery Summary Incidence - Open Field Observations [%] (Week 12 Evaluation)	177
24. Functional Observational Battery Summary Incidence - Open Field Observations (Week 16 Recovery Evaluation)	181

**VOLUME 1 (continued)**

**Page**

25.	Functional Observational Battery Summary Incidence - Open Field Observations [%] (Week 16 Recovery Evaluation)	185
26.	Functional Observational Battery Summary Incidence - Sensory Observations (Week -1 Pretest Evaluation)	189
27.	Functional Observational Battery Summary Incidence - Sensory Observations [%] (Week -1 Pretest Evaluation)	193
28.	Functional Observational Battery Summary Incidence - Sensory Observations (Week 12 Evaluation)	197
29.	Functional Observational Battery Summary Incidence - Sensory Observations [%] (Week 12 Evaluation)	201
30.	Functional Observational Battery Summary Incidence - Sensory Observations (Week 16 Recovery Evaluation)	205
31.	Functional Observational Battery Summary Incidence - Sensory Observations [%] (Week 16 Recovery Evaluation)	209
32.	Functional Observational Battery Summary Incidence - Neuromuscular Observations (Week -1 Pretest Evaluation)	213
33.	Functional Observational Battery Summary Incidence - Neuromuscular Observations [%] (Week -1 Pretest Evaluation)	215
34.	Functional Observational Battery Summary Incidence - Neuromuscular Observations (Week 12 Evaluation)	217
35.	Functional Observational Battery Summary Incidence - Neuromuscular Observations [%] (Week 12 Evaluation)	219
36.	Functional Observational Battery Summary Incidence - Neuromuscular Observations (Week 16 Recovery Evaluation)	221
37.	Functional Observational Battery Summary Incidence - Neuromuscular Observations [%] (Week 16 Recovery Evaluation)	223
38.	Functional Observational Battery Summary Incidence - Physiological Observations (Week -1 Pretest Evaluation)	225

**VOLUME 1 (continued)**

	<u>Page</u>
39. Functional Observational Battery Summary Incidence - Physiological Observations (Week 12 Pretest Evaluation)	227
40. Functional Observational Battery Summary Incidence - Physiological Observations (Week 16 Recovery Evaluation)	229
41. Group Mean Motor Activity Counts	231
42. Hematology Values - Summary of Means	233
43. Leukocyte Differential Count (%) - Summary of Means	243
44. Leukocyte Counts - Summary of Means	249
45. Serum Chemistry Values - Summary of Means	255
46. Urine Quantitative Parameters - Summary of Means	273
47. Serum Hormone Values - Summary of Means	277
48. Ophthalmological Examination Findings - Summary Incidence (Week -1 Pretest Evaluation)	281
49. Ophthalmological Examination Findings - Summary Incidence (Week 12 Evaluation)	282
50. Ophthalmological Examination Findings - Summary Incidence (Week 15 Recovery Evaluation)	283
51. Estrous Cycle Data - Summary of Means	284
52. Gross Necropsy Observations Incidence Summary (Unscheduled Death)	285
53. Gross Necropsy Observations Incidence Summary (Week 13 Primary Necropsy)	286
54. Gross Necropsy Observations Incidence Summary (Week 17 Recovery Necropsy)	288
55. Organ Weights (Grams) - Summary of Means (Week 13 Primary Necropsy)	290

**VOLUME 1 (continued)**

	<u>Page</u>
56. Organ Weights (Grams) - Summary of Means (Week 17 Recovery Necropsy)	295
57. Organ Weights Relative to Final Body Weights (Grams/100 Grams) - Summary of Means (Week 13 Primary Necropsy)	300
58. Organ Weights Relative to Final Body Weights (Grams/100 Grams) - Summary of Means (Week 17 Recovery Necropsy)	307
59. Organ Weights Relative to Brain Weights (Grams/100 Grams) - Summary of Means (Week 13 Primary Necropsy)	314
60. Organ Weights Relative to Brain Weights (Grams/100 Grams) - Summary of Means (Week 17 Recovery Necropsy)	319
61. Histomorphological Diagnosis - Summary Incidence (Unscheduled Death)	324
62. Histomorphological Diagnosis - Summary Incidence (Week 13 Primary Necropsy)	332
63. Histomorphological Diagnosis - Summary Incidence (Week 17 Recovery Necropsy)	356
64. Testicular and Epididymal Sperm Numbers (Number of Sperm in Millions/Gram of Tissue) - Summary of Means	372
65. Sperm Production Rate (Number of Sperm in Millions/Gram of Tissue/Day) - Summary of Means	373
66. Sperm Motility Assessment (Percentage) - Summary of Means	374
67. Sperm Morphology Differential Count (Percentage) - Summary of Means	375
68. Sperm Morphology Differential Count (Absolute Number) - Summary of Means	378

(Individual Data)

**VOLUME 2**

69. Individual Survival and Disposition	382
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**VOLUME 2 (continued)**

	<u>Page</u>
70. Individual Body Weights (Grams)	388
71. Individual Body Weight Gains (Grams)	412
72. Individual Food Consumption (Grams/Animal/Day)	436
73. Individual Functional Observational Battery Data - Home Cage Observations (Week -1 Pretest Evaluation)	460
74. Individual Functional Observational Battery Data - Home Cage Observations (Week 12 Evaluation)	468
75. Individual Functional Observational Battery Data - Home Cage Observations (Week 16 Recovery Evaluation)	476
76. Individual Functional Observational Battery Data - Handling Observations (Week -1 Pretest Evaluation)	484
77. Individual Functional Observational Battery Data - Handling Observations (Week 12 Evaluation)	508
78. Individual Functional Observational Battery Data - Handling Observations (Week 16 Recovery Evaluation)	532
79. Individual Functional Observational Battery Data - Open Field Observations (Week -1 Pretest Evaluation)	556
80. Individual Functional Observational Battery Data - Open Field Observations (Week 12 Evaluation)	572
81. Individual Functional Observational Battery Data - Open Field Observations (Week 16 Recovery Evaluation)	588
82. Individual Functional Observational Battery Data - Sensory Observations (Week -1 Pretest Evaluation)	604
83. Individual Functional Observational Battery Data - Sensory Observations (Week 12 Evaluation)	620
84. Individual Functional Observational Battery Data - Sensory Observations (Week 16 Recovery Evaluation)	636

**VOLUME 2 (continued)**

	<u>Page</u>
85. Individual Functional Observational Battery Data - Neuromuscular Observations (Week -1 Pretest Evaluation)	652
86. Individual Functional Observational Battery Data - Neuromuscular Observations (Week 12 Evaluation)	668
87. Individual Functional Observational Battery Data - Neuromuscular Observations (Week 16 Recovery Evaluation)	684
88. Individual Functional Observational Battery Data - Physiological Observations (Week -1 Pretest Evaluation)	700
89. Individual Functional Observational Battery Data - Physiological Observations (Week 12 Evaluation)	708
90. Individual Functional Observational Battery Data - Physiological Observations (Week 16 Recovery Evaluation)	716
91. Individual Motor Activity Counts (Week -1 Pretest Evaluation)	724
92. Individual Motor Activity Counts (Week 12 Evaluation)	732
93. Individual Motor Activity Counts (Week 16 Recovery Evaluation)	740

**VOLUME 3**

94. Individual Hematology Values (Week 3 Evaluation)	749
95. Individual Hematology Values (Week 13 Evaluation)	757
96. Individual Hematology Values (Week 17 Recovery Evaluation)	765
97. Individual Leukocyte Differential Count (%) (Week 3 Evaluation)	773
98. Individual Leukocyte Counts (Week 3 Evaluation)	781
99. Individual Leukocyte Differential Count (%) (Week 13 Evaluation)	789
100. Individual Leukocyte Counts (Week 13 Evaluation)	797

<b>VOLUME 3 (continued)</b>	<u>Page</u>
101. Individual Leukocyte Differential Count (%) (Week 17 Recovery Evaluation)	805
102. Individual Leukocyte Counts (Week 17 Recovery Evaluation)	813
103. Individual Serum Chemistry Values (Week 3 Evaluation)	821
104. Individual Serum Chemistry Values (Week 13 Evaluation)	837
105. Individual Serum Chemistry Values (Week 17 Recovery Evaluation)	853
106. Individual Macroscopic Urinalysis Values (Week 3 Evaluation)	869
107. Individual Microscopic Urinalysis Values (Week 3 Evaluation)	877
108. Individual Macroscopic Urinalysis Values (Week 13 Evaluation)	885
109. Individual Microscopic Urinalysis Values (Week 13 Evaluation)	893
110. Individual Macroscopic Urinalysis Values (Week 17 Recovery Evaluation)	901
111. Individual Microscopic Urinalysis Values (Week 17 Recovery Evaluation)	909
112. Individual Serum Hormone Values (Week 3 Evaluation)	917
113. Individual Serum Hormone Values (Week 13 Evaluation)	925
114. Individual Serum Hormone Values (Week 17 Recovery Evaluation)	933
115. Individual Ophthalmological Examination Findings (Week -1 Pretest Evaluation)	941
116. Individual Ophthalmological Examination Findings (Week 12 Evaluation)	946
117. Individual Ophthalmological Examination Findings (Week 15 Recovery Evaluation)	951
118. Individual Estrous Cycle Data	953

**VOLUME 3 (continued)**

	<u>Page</u>
119. Individual Gross and Microscopic Description of Organs (Unscheduled Death)	957
120. Individual Gross and Microscopic Description of Organs (Week 13 Primary Necropsy)	959
121. Individual Gross and Microscopic Description of Organs (Week 17 Recovery Necropsy)	1079

**VOLUME 4**

122. Individual Organ Weights and Final Body Weights (Grams) (Week 13 Primary Necropsy)	1121
123. Individual Organ Weights and Final Body Weights (Grams) (Week 17 Recovery Necropsy)	1133
124. Individual Organ Weights Relative to Final Body Weights (Grams/100 Grams) (Week 13 Primary Necropsy)	1145
125. Individual Organ Weights Relative to Final Body Weights (Grams/100 Grams) (Week 17 Recovery Necropsy)	1157
126. Individual Organ Weights Relative to Brain Weights (Grams/100 Grams) (Week 13 Primary Necropsy)	1169
127. Individual Organ Weights Relative to Brain Weights (Grams/100 Grams) (Week 17 Recovery Necropsy)	1181
128. Individual Testicular and Epididymal Sperm Numbers (Number of Sperm in Millions/Gram of Tissue) (Week 13 Primary Necropsy)	1193
129. Individual Sperm Production Rate (Number of Sperm in Millions/Gram of Tissue/Day) (Week 13 Primary Necropsy)	1197
130. Individual Sperm Motility Assessment (Percentage) (Week 13 Primary Necropsy)	1201
131. Individual Sperm Morphology Differential Count (Percent) (Week 13 Primary Necropsy)	1205

<b>VOLUME 4 (continued)</b>	<b><u>Page</u></b>
132. Individual Sperm Morphology Count (Absolute Number) (Week 13 Primary Necropsy)	1209
133. Individual Testicular and Epididymal Sperm Numbers (Number of Sperm in Millions/Gram of Tissue) (Week 17 Recovery Necropsy)	1213
134. Individual Sperm Production Rate (Number of Sperm in Millions/Gram of Tissue/Day) (Week 17 Recovery Necropsy)	1217
135. Individual Sperm Motility Assessment (Percentage) (Week 17 Recovery Necropsy)	1221
136. Individual Sperm Morphology Differential Count (Percentage) (Week 17 Recovery Necropsy)	1225
137. Individual Sperm Morphology Count (Absolute Number) (Week 17 Recovery Necropsy)	1229

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**INDEX OF APPENDICES**

<b>VOLUME 4 (continued)</b>	<u>Page</u>
A. Final Report on the Storage Stability of Hexabromocyclododecane (HBCD) in Bulk Storage in Support of "A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats." (Albemarle Corporation)	1233
B. Analytical Chemistry Report (WIL Research Laboratories, Inc.)	1241
C. Pretest Clinical Observations	1287
D. Dispositions and Body Weights (Satellite Groups)	1290
E. Scoring Criteria for Functional Observational Battery	1305
F. Summaries of Validation Studies (WIL-99032, WIL-99034, WIL-99140 and WIL-99149)	1321
G. Historical Control Data for Serum Chemistry (WIL Research Laboratories, Inc.)	1355
H. Clinical Pathology Methods, Procedures and References	1374
I. Ophthalmic Examination Report (David A. Wilkie, D.V.M., M.S., D.A.C.V.O. and Brian C. Gilger, D.V.M., M.S., D.A.C.V.O.)	1381
J. Determination of Test Article Fat Concentration (Wildlife International, Ltd.)	1383
K. Individual Clinical Observations	1420
L. Study Protocol	1499

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**I. SUMMARY**

The test article, a composite of three lots of commercial hexabromocyclododecane (HBCD), was administered by oral gavage in corn oil once daily to four groups of Crl:CD(SD)IGS BR rats (n=15/sex/group) at dose levels of 0 (control), 100 (low), 300 (mid) and 1000 (high) mg/kg/day seven days per week for 90 days. The dosage volume was 5 ml/kg. The control animals received the vehicle, corn oil, only. At the end of the 90-day treatment period, 10 animals/sex/group were euthanized and necropsied. The remaining rats continued on test untreated for a 28-day recovery period prior to necropsy.

In addition to the main toxicology groups, two satellite groups of 20 animals/sex/group were treated concurrently in an identical manner at dose levels of 0 or 1000 mg HBCD/kg/day for up to 90 days. Body weights were recorded weekly. Two animals/sex/group were euthanized on study days 2, 6, 9, 13, 20, 27, 55, 89, 104 and 118, and blood and body fat (mesenteric and/or omental) were collected. The body fat was analyzed for HBCD content.

Animals in the main toxicology groups were observed twice daily throughout the study for mortality and morbidity. Body weights and food consumption were measured weekly. Blood was collected at study weeks 3 (n=5/sex/group), 13 (n=10/sex/group) and 17 (n=5/sex/group) for hematology, serum chemistry and hormone ( $T_3$ ,  $T_4$  and TSH) measurements. Urine was collected prior to each necropsy, at study weeks 13 and 17, for urinalysis. Ocular examinations were performed prior to initiation of dosing and during study weeks 12 and 15. Functional Observational Battery and Locomotor Activity evaluations were performed on 5 animals/sex/group prior to initiation of dosing, during the last week of test article administration (study week 13), and during the recovery period. An examination of vaginal cytology (for estrus cycle determinations) was

performed on study days 69-90. At each necropsy, sperm motility/viability, morphology, and number were assessed. Complete necropsies were performed on all animals. Approximately 40 organs and/or tissues/animal were collected and preserved. The adrenals, brain, epididymides, heart, kidneys, liver, ovaries, prostate, spleen, testes, thymus, thyroids with parathyroids, and uterus with cervix were weighed. Paraffin sections of tissues stained with hematoxylin and eosin from the control and 1000 mg/kg/day dose groups and the liver, lungs, prostate glands and thyroid glands in the 100 and 300 mg/kg/day doses, and gross lesions from all animals were examined under the light microscope. Livers from five randomly chosen animals/sex from the control and 1000 mg/kg/day dose groups were examined microscopically using Oil Red O or periodic acid Schiff's (PAS) reagent for evidence of lipid accumulation or glycogen accumulation/depletion, respectively. Statistical comparisons by sex and treatment day were made between the control and treated animals where indicated ( $p<0.05$ ).

No test article-related effect on mortality occurred. Clinical signs were non-specific, low in incidence, non-dose-related and not related to test article administration. No test article-related changes occurred in body weight, food consumption, Functional Observational Battery or Locomotor Activity. No test article-related effects on hematologic parameters were noted. No test article-related ocular lesions were detected at the ophthalmic exams. No test article-related changes were noted on the estrus cycle as determined by vaginal cytology, or on sperm motility/viability, morphology, and number. Instances of statistically significant differences between control and some treatment groups were detected at study week 13 in the clinical chemistry data, hormone data, organ weight data and histology findings. They were generally secondary to the inducing effects on the liver or were otherwise not considered adverse effects of treatment as discussed further below.

Statistically significant ( $p<0.05$  or  $p<0.01$ ) test article-related clinical chemistry changes at week 13 include an increase in albumin (all dose levels for males), total protein (all dose levels for females and 1000 mg/kg/day for males), globulin (300 and 1000 mg/kg/day for females), and chloride (all doses for both sexes). In addition, increased gamma glutamyltransferase levels were noted in the 1000 mg/kg/day group ( $p<0.01$ ). Thyroxine (T<sub>4</sub>) levels were decreased at study week 13 compared to the control mean in all male dose groups and the 300 and 1000 mg/kg/day dose females ( $p<0.05$  or  $p<0.01$ ). There were no corresponding statistical effects on T<sub>3</sub> and TSH. While potentially test article-related, the changes in serum chemistry parameters were not of sufficient magnitude to be adverse, occurred in otherwise clinically normal animals, tended to be within or close to historical control values, and were not present at the end of the recovery period; furthermore, these serum albumin and gamma glutamyltransferase increases were probably secondary to the increases in liver weight. The increases in serum chloride were probably secondary to the presence of free bromide in the test article preparation which interfered with the chloride determination methodology. The decrease in T<sub>4</sub>, which was also reversible, was also probably secondary to increased liver weight (secondary to microsomal enzyme induction, known to cause increased metabolism and clearance of T<sub>4</sub> in the rat).

The incidence of observations noted at gross necropsy was low and there was no evidence of frank organ damage. On histopathologic examination of tissues, relatively mild findings occurred in both the control and treated groups. Potential test article-related histologic changes were identified in the liver and thyroid glands but these would not be considered indicative of frank toxicity. These organs were examined microscopically in all groups at both necropsies. The liver changes in male rats at the 90-day necropsy (Study Week 13) were characterized as minimal hepatocellular vacuolation and occurred in 10% of control males and ~50% of the males at 100, 300 and 1000 mg/kg/day. Minimal hepatocellular

vacuolation was also detected in females in the control and test article treated groups without a clear dose response (3 to 6/10 animals per group) but, mild and moderate vacuolation was detected in females only in the 300 (1/10) and 1000 mg/kg/day (2/10) dose groups. Minimal to mild hepatocellular hypertrophy was also detected only in the 1000 mg/kg/day group (5/10) females. Minimal thyroid follicular cell hypertrophy was detected 1/10, 1/10, 5/10 and 7/10 males in the control, 100, 300 and 1000 mg/kg/day groups, respectively and in 4/10 and 3/10 females in the 300 and 1000 mg/kg/day groups, respectively. In addition, mild thyroid follicular hypertrophy was detected in 4/10 females and 1/10 males in the 1000 mg/kg/day group. The histologic changes in the liver were accompanied by an increase in liver weight. In contrast there were no statistically significant changes in thyroid weight (absolute, relative to body weight and relative to brain weight). At study week 13, mean liver weights in all dose levels of both sexes (absolute, relative to body weight and relative to brain weight) were increased compared to the male and female control means ( $p<0.05$  or  $p<0.01$ ). The increases in liver weight were a result of a microsomal enzyme inducing effect<sup>1</sup> and were not typically considered indicative of toxicity in absence of frank organ damage. The reversible histologic changes (vacuolation and hypertrophy) are often found to accompany increased liver weight caused by liver enzyme induction. At week 17, the liver changes (weight and histology) had at least partially, if not fully, resolved in all treated groups without delayed or long-term toxic effects. The histologic changes in the thyroid had also nearly completely resolved except in the 1000 mg/kg/day group females, where partial recovery occurred.

Increases in mean prostate weight were noted in the 1000 mg/kg/day group males at the primary necropsy. However, the increases in prostate weight were probably not of toxicological significance since the increases did not persist to the

recovery period, there were no correlating histologic findings and no change in sperm production.

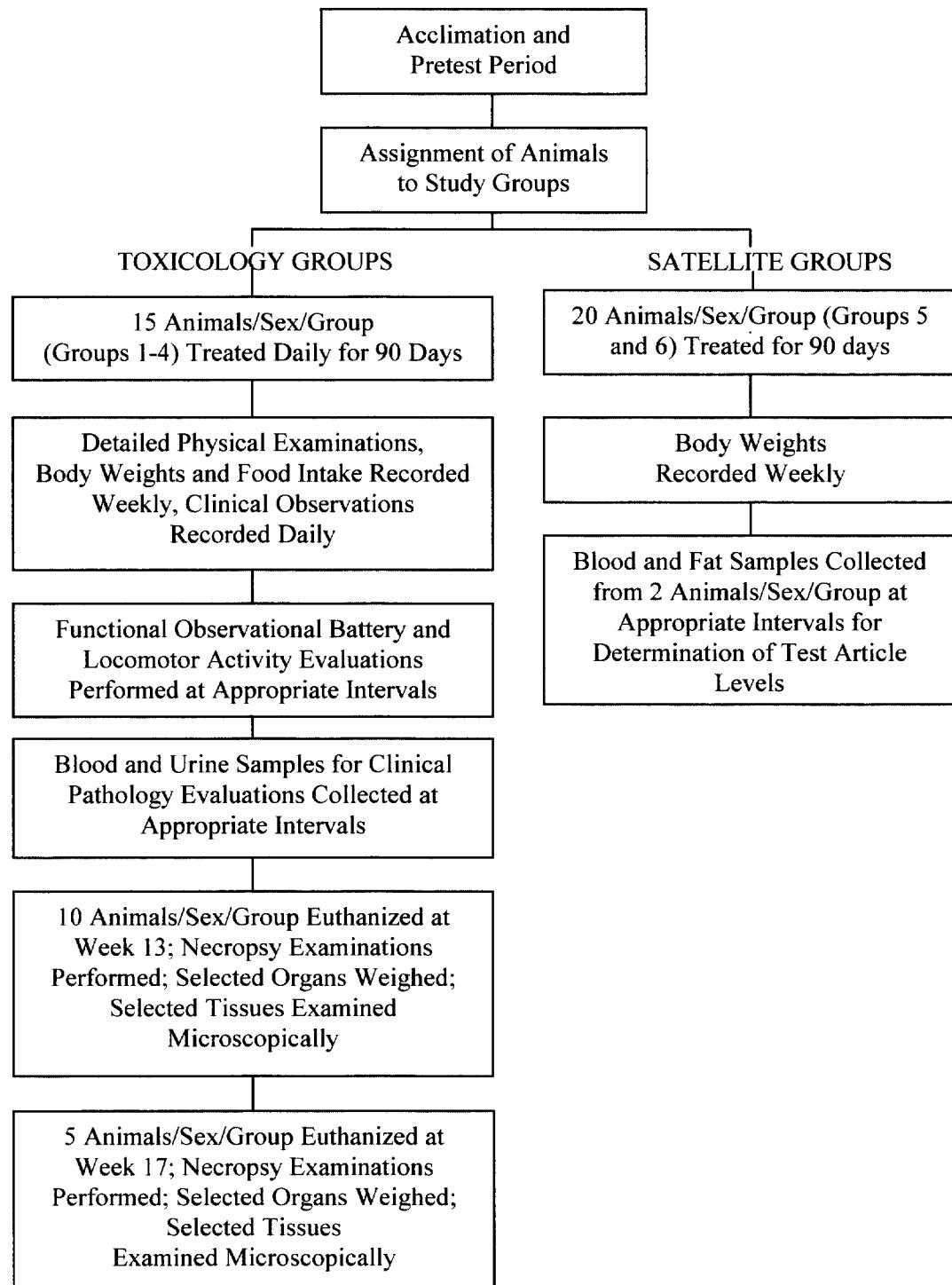
HBCD was detected in the adipose tissue of male and female rats treated with 1000 mg/kg/day for up to 90 days. Isomer-specific analysis showed that the relative isomer concentrations in adipose tissue at all time points were alpha>>gamma>beta which is in contrast to the test article composition (gamma>>alpha>beta). Steady state levels were achieved by study day 27. Levels in male and female rats were similar at all time points and declined during the recovery period.

All the test article-related changes at 100 and 300 mg/kg/day were mild, reversible, generally secondary to hepatic enzyme induction (which is an adaptive not a toxic change) and without effect on the clinical condition of the animals. The additional findings observed at 1000 mg/kg/day (increased gamma glutamyltransferase and additional increases in the size of the liver and prostate), were also reversible, not associated with specific target organ damage or diminished function and were, therefore, probably of limited, if any, toxicologic significance. On this basis the no-observed-adverse-effect level (NOAEL) of HBCD administered to Crl:CD<sup>®</sup>(SD)IGS BR rats by gavage in corn oil for 90 days is 1000 mg/kg/day.

**II. OBJECTIVE**

The objective of this study was to evaluate the potential repeated dose toxicity of HBCD when administered to rats by oral gavage at doses up to 1000 mg/kg/day for 90 days. In addition to the end points routinely evaluated in a 90-day study, this study included an evaluation of neurotoxicity potential through Functional Observational Battery (FOB) and Locomotor Activity (MA) assessments, measurement of serum TSH, T<sub>3</sub> and T<sub>4</sub> levels, vaginal cytology and sperm assessments, and measurement of test article concentration in adipose tissue. Reversibility, persistence or delayed occurrence of toxic effects were evaluated by a 28-day post-treatment recovery period. The selected route of administration was oral by gavage since this route is an acceptable and standard method for administering test material per OECD Guideline Section 408 and OPPTS Guideline 870.3100. The animal model, the Crl:CD®(SD)IGS BR rat, is recognized as appropriate for subchronic toxicity studies and substantial historical control data are available.

III. STUDY DESIGN



**IV. EXPERIMENTAL PROCEDURES**

**A. INTRODUCTION**

This report presents the data from "A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats". The experimental starting date, identified as the day of animal receipt, was April 11, 2000. Test article administration was initiated on April 26, 2000 (study day 0). The primary necropsy (study week 13) was conducted on July 26 and 27, 2000. The recovery necropsy (study week 17) was conducted on August 23, 2000. The experimental termination date, concluding with the last histopathology examination, was December 11, 2001.

The data for the toxicology groups (Groups 1-4) were assigned to computer protocol WIL-186012, and the data for the satellite groups (Groups 5 and 6) were assigned to computer protocol WIL-186012S.

**B. TEST ARTICLE AND VEHICLE**

**1. TEST ARTICLE IDENTIFICATION**

The test article, HBCD, was received from Wildlife International Ltd., Easton, Maryland, on January 14, 2000, as follows:

<u>Identification</u>	No. of Containers <u>Received</u>	<u>Description</u>
HBCD (Hexabromocyclododecane) Test Substance # 4615 Composite Sample #'s 4515,4520, 4521 [WIL Log No. 4590A]	One Bottle Gross Weight: 3158.1 g	Off -white powder

The test article was a composite made from equal portions of three individual commercial HBCD products manufactured by Albemarle Corporation, Dead Sea Bromine Group/Bromine Compounds, Ltd., and Great Lakes Chemical Corporation. The characterization of the test article was the responsibility of the sponsor. The test article was stored at room

temperature ( $68\pm4^{\circ}\text{F}$ ), in a dry, well-ventilated area and was considered stable under these conditions (Appendix A). On February 1, 2000, a 1.07g sample of the test article was collected and stored in the Archives at WIL Research Laboratories, Inc.

**2. VEHICLE IDENTIFICATION**

The vehicle utilized in preparation of the test mixtures and for administration to the control group was Mazola<sup>®</sup> corn oil, manufactured by Best Foods Division, CPC International, Inc., Englewood Cliffs, New Jersey.

**3. PREPARATION**

A sufficient volume of the vehicle, Mazola<sup>®</sup> corn oil, was dispensed into a storage container. The vehicle was stirred continuously throughout use with a magnetic stirrer.

The appropriate amount of test article for each group was weighed into tared, calibrated storage containers. A sufficient amount of the vehicle was added and stirred until a uniform mixture was obtained using a magnetic stirrer. The appropriate amount of vehicle was added to bring the formulation to volume. Preparations were stirred until uniform and continuously throughout use. After preparation, dosing formulations were divided into daily aliquots.

All dosing formulations were prepared weekly and stored at room temperature.

**4. ADMINISTRATION**

The test mixtures were administered orally by gastric intubation via a 16-gauge stainless steel gavage cannula (Popper and Sons, Inc., Hyde Park, New York 11040) as a single daily dose for a minimum of 90 consecutive days through the day prior to the scheduled necropsy. A dose volume of 5 ml/kg was used for all dosage levels. The concurrent control group

animals received the vehicle, Mazola® corn oil, on a comparable regimen at a dose volume of 5 ml/kg. Animals were dosed at approximately the same time each day. Individual dosages were adjusted based on the most recent body weights to provide the correct mg/kg/day dose. Adjusted doses became effective the day after collection of the weekly body weights.

The following table presents the study group assignment:

<u>Group Number</u>	<u>Treatment</u>	<u>Dosage Level (mg/kg/day)</u>	<u>Dosage Volume (ml/kg)</u>	<u>Number of Animals<sup>a</sup></u>	
<u>Toxicology Groups (WIL-186012)</u>					
1	Vehicle	0	5	15	15
2	HBCD	100	5	15	15
3	HBCD	300	5	15	15
4	HBCD	1000	5	15	15
<u>Satellite Groups<sup>b</sup> (WIL-186012S)</u>					
5	Vehicle	0	5	20	20
6	HBCD	1000	5	20	20

<sup>a</sup>= First five animals/sex/group were assigned to the neurotoxicity evaluations (FOB and MA) and were also assigned to the 28-day recovery period.

<sup>b</sup>=Animals were used for the collection of tissues for special analyses.

## 5. SAMPLING AND ANALYSES

Prior to the initiation of dosing, sample dosing formulations were prepared for the lowest and highest concentration groups, and 10-ml aliquots were withdrawn from the top, middle and bottom of each solution for homogeneity determinations. Samples were also collected from the middle of these preparations and stored under laboratory conditions for ten days. These samples were then used for stability analyses. In addition, the remainder of each preparation was subdivided into seven aliquots and stored at room temperature. Following storage for ten days and re-suspension using the same procedures to be used for dosing, samples were taken from the top and bottom of the last daily aliquot from each preparation and were analyzed to confirm homogeneity in a dosing aliquot. Dosage preparations, including the control group, were verified for test

material concentration using a validated HPLC method during study weeks 0, 1, 2, 3, 7 and 12. Upon the completion of the in-life phase, all remaining (unused) test material was returned to the sponsor.

All analyses of the dosing formulations were performed at WIL Research Laboratories, Inc., and the methodology and results are presented in Appendix B. The dosing formulations were homogeneous and within 100% ( $\pm$  10%) of target dose concentrations.

**C. ANIMAL RECEIPT AND ACCLIMATION/PRETEST PERIOD**

One hundred twenty-one male and one hundred twenty-two female Crl:CD<sup>®</sup>(SD)IGS BR rats in good health were received on April 11, 2000, from Charles River Laboratories, Portage, Michigan. The animals were 36 days old upon receipt. Each animal was examined by a qualified technician on the day of receipt and weighed on the following day. Animals were uniquely identified by Monel<sup>®</sup> metal eartags displaying the permanent identification number. All animals were housed for a 15-day acclimation and pretest period; observations were made twice daily for mortality and general changes in appearance or behavior.

Pretest data collection began on April 20, 2000. Individual body weights were recorded and detailed physical examinations were performed on the first and last days of pretest week -1 (April 20 and 25, 2000, respectively). Individual food consumption was measured for the interval week -1 to week 0. Functional Observational Battery and Locomotor Activity assessments were performed on five animals/sex/group during pretest. For computer entry, some pretest data were assigned to computer protocol number WIL-186012P. Pretest clinical observations are presented in Appendix C.

**D. ANIMAL HOUSING**

All animals were housed individually in clean, wire-mesh cages suspended above cage-board. All animals were maintained in accordance with the "Guide

for the Care and Use of Laboratory Animals."<sup>3</sup> The animal facilities at WIL Research Laboratories, Inc., are accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International).

**E. DIET, DRINKING WATER AND MAINTENANCE**

The basal ration used in this study was PMI Nutrition International, Inc., Certified Rodent LabDiet<sup>®</sup> 5002, a certified feed with appropriate analyses performed by the manufacturer and provided to WIL Research Laboratories, Inc. Municipal water supplying the facility is sampled and analyzed for contaminants according to standard operating procedures. The results of these analyses are maintained at WIL Research Laboratories, Inc. Contaminants were not present in animal feed or water at levels sufficient to interfere with the objectives of this study. The basal diet and reverse osmosis-treated (on-site) drinking water, delivered by an automatic watering system, were provided *ad libitum* throughout the study period except during the period of fasting prior to blood collection when food but not water was withheld.

**F. ENVIRONMENTAL CONDITIONS**

All animals were housed throughout the acclimation period and during the study in an environmentally-controlled room. Controls were set to maintain temperature at  $72 \pm 5^{\circ}\text{F}$  ( $22^{\circ} \pm 3^{\circ}\text{C}$ ) and relative humidity at approximately 30-70%. Room temperature and relative humidity were recorded daily. Actual recorded ranges for temperature and humidity were 70.0 to 76.5°F (21.1 to 24.7°C) and 37.7 to 68.0%, respectively, during the study period. Light timers were set to provide a 12-hour light/12-hour dark photoperiod. The light/dark periods were interrupted as necessary to conduct protocol-specified activities.

**G. ASSIGNMENT OF ANIMALS TO TREATMENT GROUPS**

On April 20, 2000, (study day -6), all available rats were weighed using the WIL Toxicology Data Management System (WTDMST<sup>™</sup>) and examined in

detail for physical abnormalities. These data were reviewed by the study director and animals judged suitable for testing were selected for use in the computerized randomization procedure. A printout containing the animal numbers and individual group assignments was generated based on body weight stratification in a block design. The animals then were arranged according to the printout. The toxicology groups each consisted of 15 males and 15 females and the satellite groups each consisted of 20 males and 20 females. After randomization into study groups, animals were then assigned to recovery. These animals were then randomized into two study replicates to allow for the reasonable conduct of the Functional Observational Battery and Locomotor Activity assessments. Each dose group and sex were approximately equally represented within each study replicate. The selected animals were approximately seven weeks old at the initiation of dosing; body weight values ranged from 212 to 289 grams for the males and from 147 to 205 grams for the females in the toxicology groups and 204 to 268 grams for the males and 143 to 201 grams for the females in the satellite groups. Body weights at randomization were within  $\pm$  20% of the mean for all animals.

#### H. CLINICAL OBSERVATIONS AND SURVIVAL (ALL GROUPS)

The animals were observed twice daily, once in the morning and once in the afternoon, for mortality and moribundity. Clinical observations were performed on all toxicology group animals approximately one to two hours following dosing (designated as one hour post-dosing for reporting purposes). During the recovery period, animals were examined once daily. Each animal in the toxicology group received a detailed physical examination weekly beginning one week prior to test article administration (study week -1), and prior to the scheduled necropsy. The animals were removed from their home cages and placed in a standard arena for observation. Observations were detailed and carefully recorded. Signs noted included, but were not limited to, changes in

skin, fur, eyes or mucous membranes, occurrence of secretions and excretions and autonomic activity (e.g., lacrimation, piloerection, pupil size, unusual respiratory pattern). Changes in gait, posture and response to handling, as well as the presence of clonic or tonic movements, stereotypical (e.g., excessive grooming, repetitive circling) or bizarre behavior (e.g., self mutilation, walking backwards) was recorded. Signs such as skin lesions and hair loss were also recorded. The absence or presence of findings was recorded for individual animals.

I. BODY WEIGHTS (ALL GROUPS)

Individual body weights were recorded weekly, beginning one week prior to test article administration. Mean body weight changes were calculated for each study week. A final body weight (fasted) was recorded for each animal on the day of scheduled necropsy.

J. FOOD CONSUMPTION (TOXICOLOGY GROUPS)

Individual food consumption was measured weekly, beginning one week prior to test article administration. When food consumption could not be measured for a given interval (due to spillage, weighing error, obvious erroneous value, etc.) the appropriate interval was footnoted as "NA" (Not Applicable) on the individual tables. Food intake was calculated as g/animal/day for the corresponding body weight intervals.

K. FUNCTIONAL OBSERVATIONAL BATTERY (TOXICOLOGY GROUPS)

Functional Observational Battery (FOB) evaluations were performed on five animals/sex/group during the pretest week and the last week of test article administration (study weeks -1 and 12, respectively). Evaluations were also performed on the same five designated recovery animals/sex/group (Groups 1-4) during study week 16 of the recovery period. Testing was performed by the same technicians, whenever possible, without knowledge of the animal group assignment. The FOB was performed in a sound-attenuated room equipped

WIL-186012  
CMA-BFRIP

with a white noise generator set to operate at  $70 \pm 10$  db. All animals were observed for the following parameters as described below (refer to Appendix E for a detailed description of the scoring criteria used for each observation):

1. HOME CAGE OBSERVATIONS

Posture	Biting
Convulsions/Tremors	Palpebral (eyelid) closure
Feces consistency	

2. HANDLING OBSERVATIONS

Ease of removal from cage	Salivation
Lacrimation/Chromodacryorrhea	Fur appearance
Piloerection	Respiratory rate/character
Palpebral closure	Mucous membranes/Eye/
Red/Crusty deposits	Skin color
Eye prominence	Muscle tone
Ease of handling animal in hand	

3. OPEN FIELD OBSERVATIONS (evaluated over a 2-minute observation period)

Mobility	Gait
Rearing	Arousal
Convulsions/Tremors	Urination/Defecation
Grooming	Gait score
Bizarre/Stereotypic behavior	Backing
Time to first step (seconds)	

4. SENSORY OBSERVATIONS

Approach response	Touch response
Startle response	Tail pinch response
Pupil response	Eyeblink response
Forelimb extension	Hindlimb extension
Air righting reflex	Olfactory orientation

5. NEUROMUSCULAR OBSERVATIONS

Hindlimb extensor strength	Grip strength - hind and forelimb
Hindlimb foot splay	Rotarod performance

6. PHYSIOLOGICAL OBSERVATIONS

Catalepsy	Body weight
Body temperature	

L. LOCOMOTOR ACTIVITY (TOXICOLOGY GROUPS)

Locomotor Activity observations were performed on five animals/sex/group during the pretest week and the last week of test article administration (study weeks -1 and 12, respectively). Evaluations were also performed on the same five designated recovery animals/sex/group during study week 16 of the recovery period.

Locomotor Activity, recorded after the completion of the FOB, was measured automatically using the San Diego Instruments - Photobeam Activity System (San Diego Instruments Inc., San Diego, CA). This personal computer-controlled system utilizes a series of infrared photobeams surrounding a clear plastic, rectangular cage to quantify each animal's motor activity. The testing of treatment groups was done according to replicate sequence. Each animal was tested separately. Data were collected in five minute epochs (print intervals) and the test session duration was 60 minutes.

Data for ambulatory and total motor activity were tabulated. Total motor activity was defined as a combination of fine motor skills (i.e. grooming; interruption of one photobeam) and ambulatory motor activity (interruption of two or more consecutive photobeams).

**M. CLINICAL PATHOLOGY (TOXICOLOGY GROUPS)**

Blood samples for clinical pathology evaluations were taken from five animals/sex/group at approximately one month (May 17, 2000, study week 3), from ten animals/sex/group at the end of the dosing period (July 26, 2000, study week 13) and from five animals/sex/group at the end of the recovery period (August 23, 2000, study week 17). The animals were fasted overnight prior to each blood collection. Blood was collected from the lateral tail vein at the one month evaluation and prior to the scheduled necropsies (except as noted below). Urine samples were collected from all animals overnight using metabolism cages the day prior to blood collection. Historical control data for selected serum chemistry parameters is presented in Appendix G. Clinical pathology methods, procedures and references are presented in Appendix H.

**1. HEMATOLOGY**

Total Leukocyte Count (White Cell)	Prothrombin Time (Pro Time) <sup>a</sup>
Erythrocyte Count (Red Cells)	Activated Partial Thromboplastin Time (APTT) <sup>a</sup>
Hemoglobin	Differential Leukocyte Count
Hematocrit	Percent and Absolute
Mean Corpuscular Volume (MCV)	-Neutrophil
Mean Corpuscular Hemoglobin (MCH)	-Lymphocyte
Mean Corpuscular Hemoglobin Concentration (MCHC)	-Monocyte
Platelet Count <sup>a</sup>	-Eosinophil
	-Basophil
	Platelet Estimate <sup>b</sup>
	Red Blood Cell Morphology (RBC Morphology) <sup>b</sup>

( ) = Designates tabular abbreviation

<sup>a</sup> = Terminal evaluation only, blood collected from the vena cava after euthanasia

<sup>b</sup> = Presented on individual tables if the automated differential data (CELL-DYN® 3500, Abbott Laboratories, Santa Clara, CA) were verified by manual review of the slides

2. SERUM CHEMISTRY

Albumin	Aspartate Aminotransferase
Total Protein	(Aspartat Transfer)
Globulin [by calculation]	Gamma Glutamyltransferase
Albumin/Globulin Ratio	(Glutamyl Transfer)
(A/G Ratio)	Glucose
Total Bilirubin (Total Bili)	Total Cholesterol (Cholesterol)
Urea Nitrogen	Calcium
Creatinine	Chloride
Alkaline Phosphatase	Phosphorus
(Alkaline Phos'tse)	Potassium
Alanine Aminotransferase	Sodium
(Alanine Transfer)	

( ) = Designates tabular abbreviation

3. URINALYSIS

Specific Gravity (SG)	Ketones (KET)
pH	Bilirubin (BIL)
Urobilinogen (URO)	Occult Blood (BLD)
Total Volume (TVOL)	Leukocytes (LEU)
Color	Nitrites (NIT)
Appearance (APP)	Microscopy of Sediment
Protein (PRO)	[Tabular abbreviations
Glucose (GLU)	appear on individual tables]

( ) = Designates tabular abbreviation

4. SERUM HORMONES

Thyroid Stimulating Hormone (TSH)	Triiodothyronine (Total T <sub>3</sub> ) Thyroxine (Total T <sub>4</sub> )
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( ) = Designates tabular abbreviation

N. OPHTHALMIC EXAMINATIONS (TOXICOLOGY GROUPS)

Ocular examinations were conducted on all animals prior to the initiation of dosing (study week -1), during study week 12 and during the recovery period (study week 15). All ocular examinations were conducted using an indirect ophthalmoscope and a slit lamp biomicroscope, preceded by pupillary dilation with an appropriate mydriatic agent. Examinations prior to test article

administration and during study week 12 were performed by David A. Wilkie, D.V.M., M.S., D.A.C.V.O. Examinations during the recovery period were performed by Brian C. Gilger, D.V.M., M.S., D.A.C.V.O. (Appendix I).

O. DETERMINATION OF ESTROUS CYCLES (TOXICOLOGY GROUPS)

Vaginal smears for determination of the stage of estrus were obtained from all females once daily beginning study day 69 through the last primary necropsy for the females. The average cycle length was calculated for complete estrous cycles (i.e., the total number of returns to metestrus [M] or diestrus [D] from estrus [E] or proestrus [P]) beginning on study day 69. The final vaginal smear for each female was collected on the day of necropsy.

P. ANATOMIC PATHOLOGY (TOXICOLOGY GROUPS)

1. MACROSCOPIC EXAMINATION

A complete necropsy was conducted all animals. All animals were euthanized by carbon dioxide followed by exsanguination. The necropsy included, but was not limited to, examination of the external surface, all orifices and the cranial, thoracic, abdominal and pelvic cavities including viscera. At the time of necropsy, the following tissues and organs were collected and preserved in 10% neutral buffered formalin:

Adrenals (2)	Ovaries with oviducts (2)
Aorta	Pancreas
Bone with marrow (sternebrae)	Peripheral nerve (sciatic)
Bone marrow smear (from femur) <sup>a</sup>	Pituitary
Brain (forebrain, midbrain, hindbrain)	Prostate
Epididymides(2) <sup>b,c</sup>	Salivary glands [mandibular (2)]
Eyes with optic nerve (2) <sup>d</sup>	Seminal vesicles (2)
Gastrointestinal tract	Skeletal muscle (vastus medialis)
Esophagus	Skin
Stomach	Spinal cord (cervical, midthoracic, lumbar)
Duodenum	Spleen
Jejunum	Testes (2) <sup>b,c</sup>
Ileum	Thymus
Cecum	Thyroids [with parathyroids if present (2)]
Colon	Trachea
Rectum	Urinary bladder
Heart	Uterus with cervix
Kidneys (2)	Vagina
Liver (sections of two lobes) <sup>e</sup>	Vas deferens (2)
Lungs [including bronchi, fixed by inflation with fixative (2)]	All gross lesions (when possible)
Lymph node	
Mesenteric	
Submandibular	
Mammary gland (females only)	

<sup>a</sup> = Bone marrow smears were obtained at the scheduled necropsies but were not placed in 10% neutral buffered formalin; to be examined only if scientifically warranted.

<sup>b</sup> = Left testis and epididymis used for spermatogenic evaluation (See Section IV.Q.).

<sup>c</sup> = Testis and epididymis (right only) were preserved in Bouin's solution. Transverse sections of 2-4 microns were made for the testis and longitudinal sections for the epididymis. PAS and hematoxylin staining was used for the right testis and epididymis. The following regions of the epididymis was embedded: caput, corpus and cauda.

<sup>d</sup> = Preserved in Davidson's solution.

<sup>e</sup> = Livers from five rats/sex (randomly chosen) were examined microscopically from the control and high dose groups for the presence of lipid and glycogen.

**2. ORGAN WEIGHTS**

The following organs from animals euthanized at the scheduled necropsies were weighed:

Adrenals	Ovaries (with oviducts)
Brain	Prostate
Epididymides** (total and cauda)	Spleen
Heart	Testes**
Kidneys	Thymus
Liver	Thyroids with parathyroids*
	Uterus and cervix

Paired organs were weighed together. Designated (\*\*) paired organs were weighed separately. Designated (\*) organs were weighed after fixation. Organ to final body weight and organ to brain weight ratios were calculated.

**3. SLIDE PREPARATION AND MICROSCOPIC EXAMINATION**

After fixation, protocol-specified tissues were trimmed according to standard operating procedures and the protocol. Trimmed tissues were processed into paraffin blocks, sectioned at 5-8 microns, mounted on glass microscope slides and stained with hematoxylin and eosin.

Microscopic examination was conducted on all tissues listed in Section IV.P.1. from all animals in the control and 1000 mg/kg/day groups at the primary necropsy. The liver, lungs, prostate glands and thyroid glands were examined from all animals in the 100 and 300 mg/kg/day groups euthanized at the primary necropsy, and all animals at the recovery necropsy. In addition, the livers from five animals/sex (randomly chosen) from the control and 1000 mg/kg/day groups were also examined microscopically for evidence of lipid accumulation and glycogen accumulation or depletion. Frozen sections of fixed tissue were prepared and stained with Oil Red O by Pathology Associates International (PAI), Fredericksburg, Maryland, and returned to WIL Research Laboratories, Inc. These sections were examined

by the study pathologist for evidence of lipid accumulation. The paraffin-embedded tissue was sectioned and stained with periodic acid Schiff's reagent (with and without diastase treatment) by WIL Research Laboratories, Inc. These sections were examined by the study pathologist for evidence of glycogen accumulation or depletion.

Microscopic examinations were conducted by Ann E. Radovsky, D.V.M., Ph.D., D.A.C.V.P., D.A.B.T., Staff Pathologist, WIL Research Laboratories, Inc.

**Q. SPERMATOGENESIS EVALUATIONS (TOXICOLOGY GROUPS)**

The following quantitative assessments of the process of spermatogenesis were performed on all males at the primary and recovery necropsies.

**1. MOTILITY/VIABILITY ASSESSMENT**

Immediately following euthanasia, the reproductive tract of each male was exposed via a ventral mid-line incision. The right epididymis was excised and weighed separately with the exception noted in Section X.5. An incision was made in the distal region of the cauda epididymis. The cauda was then placed in Dulbecco's phosphate-buffered saline (maintained at approximately 37°C) with 10 mg/ml Bovine Serum Albumin (BSA). A sample of the diluted sperm was then loaded into a 100 µl cannula for determination of motility. As sperm motility can be affected by temperature shock, all cannulas, diluents and slides were pre-warmed and maintained at 37°C. Motility determinations were performed under constant temperature (approximately 37°C) using the Hamilton-Thorne HTM-IVOS Version 10 computer-assisted sperm analysis (CASA) system. At least 200 (if possible) motile and nonmotile spermatozoa/animal were analyzed.

2. MORPHOLOGY ASSESSMENT

A sample of sperm for morphology assessment was obtained from the right cauda epididymis of each male. Sperm morphology was evaluated using a modification of the wet-mount technique described by Linder *et al.*<sup>4</sup> Abnormal forms of sperm (double heads, double tails, micro- or megacephalic, etc.) were recorded from a differential count of 200 spermatozoa/animal.

3. ENUMERATION OF EPIDIDYMAL AND TESTICULAR SPERM NUMBERS AND SPERM PRODUCTION RATE (SPR)

The left testis and epididymis from each male at the scheduled necropsies were weighed and frozen, then homogenized and evaluated for sperm numbers and sperm production rate using the method described by Blazak *et al.*<sup>5</sup> Analyses were performed using the Hamilton-Thorne CASA system.

R. DETERMINATION OF TEST ARTICLE FAT CONCENTRATION (SATELLITE GROUPS)

On study days 2, 6, 9, 13, 20, 27, 55, 89, 104 and 118, two animals/sex/group were euthanized by carbon dioxide asphyxiation. Immediately upon euthanasia, approximately two to three ml of blood were collected from the vena cava and placed in clot tubes for serum preparation. Serum samples were frozen at approximately -20°C for potential analysis of the test article or bromide concentration. After the blood samples were collected, one to two grams of fat (mesenteric and/or omental) was collected. Perirenal fat was collected if necessary to obtain a sample of sufficient size. Samples were frozen in liquid nitrogen and stored at approximately -70°C until overnight shipment on dry ice to Wildlife International, Easton, Maryland, for determination of test article concentration (Appendix J).

**S. STATISTICAL METHODS**

All statistical tests were performed using appropriate computing devices or programs. All analyses were two-tailed for significance levels of 5% and 1%. Each mean was presented with the standard deviation (S.D.) and the number of animals (N) used to calculate the mean. Statistical analyses were not performed if the number of animals was two or less. Body weights, body weight changes, food consumption, estrous cycle, clinical pathology data, organ weights epididymal and testicular sperm numbers and sperm production rates were subjected to a one-way analysis of variance (ANOVA).<sup>6</sup> If significant differences ( $p<0.05$ ) were indicated by the ANOVA,<sup>6</sup> Dunnett's test<sup>7</sup> was used to compare the control and treated groups. Clinical laboratory values for leukocytes that occur at a low incidence (i.e., monocytes, eosinophils and basophils) were not subjected to statistical analysis.

The percentage of motile spermatozoa and the percentage of sperm with normal morphology were analyzed by the Kruskal-Wallis nonparametric ANOVA test<sup>8</sup> to determine intergroup differences, followed by the Mann-Whitney U-Test<sup>8</sup> comparing the control and test article-treated groups if the ANOVA revealed statistical significance ( $p<0.05$ ).

**T. DATA RETENTION**

The sponsor will have title to all documentation records, raw data, specimens or other work product generated during the performance of the study. All work product including raw paper data and specimens will be retained in the Archives at WIL Research Laboratories, Inc., as per protocol.

Raw data, a retention sample of the test article and the original final report will be retained in the Archives at WIL Research Laboratories, Inc., in compliance with regulatory requirements.

V. RESULTS

A. CLINICAL OBSERVATIONS AND SURVIVAL (ALL GROUPS)

Summary Data: Tables 1, 2, 2A, 2B, 3, 4

Individual Data: Table 69 and Appendix K

There were no test article-related deaths. However, one male (no. 43359) in the 1000 mg/kg/day group was found dead on study day 11. There were no clinical observations 24 hours prior to death. Although the cause of death was undetermined, the lack of any other deaths in the 1000 mg/kg/day group indicate that this death was probably unrelated to administration of HBCD.

All other animals survived to the scheduled necropsies. No clinical signs which could be attributed to the test article were observed. Clinical signs in the test article-treated groups were observed similarly in the control group, were limited to a few animals in various groups and/or were findings commonly noted in laboratory rats of this strain.

B. BODY WEIGHTS (ALL GROUPS)

Summary Data: Tables 5, 6

Individual Data: Tables 70, 71

Mean body weights of the male and female treated groups were statistically comparable to the control means throughout the study ( $p<0.05$ ). Occasional statistically significant decreases in body weight gains were detected in males, 1000 mg/kg/day group, but these were slight and did not follow any trends or patterns. Female body weight gains in the treated groups were comparable to the control mean at all time points.

C. FOOD CONSUMPTION (TOXICOLOGY GROUPS)

Summary Data: Table 7

Individual Data: Table 72

Food consumption was not affected by test article administration at any dose level. Scattered incidences of statistically significant differences were

occasionally noted, but these differences were considered incidental and not biologically or toxicologically significant.

D. FUNCTIONAL OBSERVATIONAL BATTERY (TOXICOLOGY GROUPS)

1. HOME CAGE OBSERVATIONS

Summary Data: Tables 8, 9, 10, 11, 12, 13

Individual Data: Tables 73, 74, 75

No remarkable differences were apparent between the control and treated groups at any evaluation.

2. HANDLING OBSERVATIONS

Summary Data: Tables 14, 15, 16, 17, 18, 19

Individual Data: Tables 76, 77, 78

No remarkable differences were apparent between the control and treated groups when the handling observations were evaluated during study week 12 and during the recovery evaluation.

3. OPEN FIELD OBSERVATIONS

Summary Data: Tables 20, 21, 22, 23, 24, 25

Individual Data: Tables 79, 80, 81

No remarkable differences were apparent between the control and treated groups when the open field observations were evaluated during study week 12 and during the recovery evaluation.

4. SENSORY OBSERVATIONS

Summary Data: Tables 26, 27, 28, 29, 30, 31

Individual Data: Tables 82, 83, 84

No remarkable differences were apparent between the control and treated groups when the sensorimotor observations were evaluated during study week 12 and during the recovery evaluation.

5. NEUROMUSCULAR OBSERVATIONS

Summary Data: Tables 32, 33, 34, 35, 36, 37

Individual Data: Tables 85, 86, 87

No remarkable differences were apparent between the control and treated groups when the neuromuscular responses were evaluated during study week 12 and during the recovery evaluation.

6. PHYSIOLOGICAL OBSERVATIONS

Summary Data: Tables 38, 39, 40

Individual Data: Tables 88, 89, 90

No remarkable differences were apparent between the control and treated groups when the physiological parameters were evaluated during study week 12 and during the recovery evaluation.

E. LOCOMOTOR ACTIVITY (TOXICOLOGY GROUPS)

Summary Data: Table 41

Individual Data: Tables 91, 92, 93

No remarkable differences were apparent between the control and treated groups when Locomotor Activity was evaluated during study week 12 and during the recovery evaluation.

F. CLINICAL PATHOLOGY(TOXICOLOGY GROUPS)

1. HEMATOLOGY

Summary Data: Tables 42, 43, 44

Individual Data: Tables 94, 95, 96, 97, 98, 99, 100, 101, 102

No test article-related significant changes in hematology parameters were detected at study weeks 3, 13 or 17. Occasional scattered statistically significant differences from the control group were noted in treated animals; however these were not considered biologically significant. These included at study week 3 increased mean hematocrit and hemoglobin content in the 300 mg/kg/day group males ( $p<0.05$ ). Mean

prothrombin time was increased in the 100, 300 and 1000 mg/kg/day group males at study week 13 ( $p<0.05$ ). The mean prothrombin time was decreased in the 100 and 300 mg/kg/day group females at study week 13 ( $p<0.05$ ). None of these changes were of sufficient magnitude as to be toxicologically significant. No other remarkable differences from the control group were observed in hematology parameters.

2. SERUM CHEMISTRY

Summary Data: Table 45

Individual Data: Tables 103, 104, 105

Historical Control Data: Appendix G

Statistically significant ( $p<0.05$  or  $p<0.01$ ) differences from the control group were noted at study weeks 3, 13, and 17. These statistical differences (refer to Text Tables 1 and 2) were as follows. Mean total protein was increased in the 1000 mg/kg/day group males and 100, 300 and 1000 mg/kg/day group females. In the male treated groups, the increased total protein appeared primarily due to the increased albumin (100, 300 and 1000 mg/kg/day groups) while in the female treated groups the increases were due to increased globulin (300 and 1000 mg/kg/day groups). The slight nature of these changes, lack of associated pathology and the differences between genders indicate that these changes were not of toxicological significance. Dose-related increased serum chloride values were noted in the 100, 300 and 1000 mg/kg/day group males and females at study weeks 3 and 13; however these apparent increases may have been due to bromide ion contamination in the test article which in turn can artificially elevate chloride ions by interfering in the laboratory method as free chloride ions. In addition, there were no observations or histologic changes consistent with hyperchloremia. Higher serum gamma glutamyltransferase was noted in the 1000 mg/kg/day group males and

females at study weeks 3 and 13, when compared to the control group, but this change did not persist to the study week 17 recovery evaluation. A pattern of responses could suggest a relationship to treatment with the test article but an analysis indicates that these findings were not of toxicological consequence.

**Text Table 1: Selected Serum Chemistry Results for Male Rats at Study Week 13**

<u>Parameter</u>	HBCD Dose Levels (mg/kg/day)				<u>Normal Range<sup>a</sup></u>
	<u>0</u>	<u>100</u>	<u>300</u>	<u>1000</u>	
Albumin	4.3	4.6*	4.7**	4.9**	4.4-4.7
Total Protein	7.0	7.2	7.2	7.6**	6.7-7.3
Globulin	2.6	2.6	2.5	2.7	2.2-2.8
Chloride	99	104**	107**	114**	99-103
GGT	0	0	0	1**	0.27±0.569

\* = p<0.05   \*\* = p<0.01

<sup>a</sup> = WIL Research Laboratories, Inc., Historical Control data (average ± S.D.) presented in Appendix G.

**Text Table 2: Selected Serum Chemistry Results for Female Rats at Study Week 13**

<u>Parameter</u>	HBCD Dose Levels (mg/kg/day)				<u>Normal Range<sup>a</sup></u>
	<u>0</u>	<u>100</u>	<u>300</u>	<u>1000</u>	
Albumin	5.2	5.6	5.6	5.7	4.7-5.6
Total Protein	7.3	7.9**	8.1**	8.3**	6.9-7.9
Globulin	2.1	2.3	2.4*	2.5**	2.0-2.5
Chloride	101	104**	105**	111**	99-104
GGT	0	0	0	2**	0.41±0.934

\* = p<0.05   \*\* = p<0.01

<sup>a</sup> = WIL Research Laboratories, Inc., Historical Control data (average ± S.D.) presented in Appendix G.

No other test article-related effects were noted on serum chemistry parameters. However, several statistically significant (p<0.05 or p<0.01) differences were noted in the treated groups when compared to the control group. Mean calcium levels were increased in the 100, 300 and 1000 mg/kg/day group females at study weeks 3 and 13, when compared

to the control group. Decreased mean total bilirubin was noted in the 100, 300 and 1000 mg/kg/day group males at study week 3, when compared to the control group. Mean glucose was decreased in the 300 mg/kg/day group males and increased in the 100 mg/kg/day group females at study week 3, when compared to the control group. Mean urea nitrogen was decreased in the 1000 mg/kg/day group females and decreased aspartate aminotransferase was noted in the 100 and 1000 mg/kg/day group females at study week 3, when compared to the control group. Decreased alkaline phosphatase was noted in the 100, 300 and 1000 mg/kg/day group females at study week 13, when compared to the control group. None of these differences were attributed to treatment with test article due to the lack of a dose-related response, the lack of similar changes at other evaluations, or occurrence in a direction which is without physiologic significance (i.e. the decrease BUN and creatinine in 300 mg/kg/day group females and the decrease in serum alanine aminotransferase and aspartate aminotransferase in the 100, 300 and 1000 mg/kg/day group males and 300 and 1000 mg/kg/day group males, respectively). Additionally, the absolute changes in the measured parameters of the 100 and 300 mg/kg/day groups were small and within the range of historical control values for this species, strain, sex and laboratory (e.g. total plasma protein, serum calcium, serum GGT, serum albumin, serum globulin and serum chloride). At study week 17, increased mean albumin was noted in the 300 mg/kg/day group males, when compared to the control group. However, this increase was not attributed to treatment since a similar increased value was not observed in the 1000 mg/kg/day group males. No other remarkable differences were noted in serum chemistry parameters.

3. URINALYSIS

Summary Data: Table 46

Individual Data: Tables 106, 107, 108, 109, 110, 111

No test article-related effects were found on urinalysis. A statistically increased value in total volume in the 300 mg/kg/day dose males at study week 13 was detected compared to the control group ( $p<0.05$ ), but was considered not related to treatment due to the lack of dose response and the absence of histologic changes indicative of renal disease.

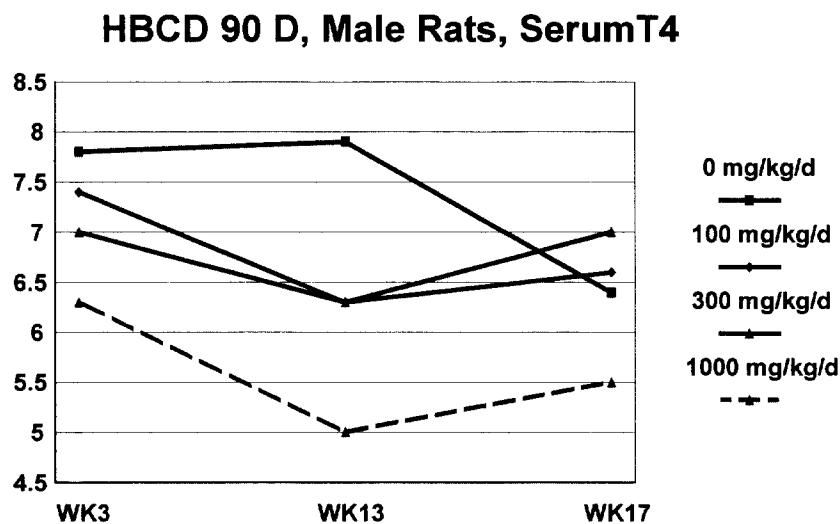
4. SERUM HORMONES

Summary Data: Table 47

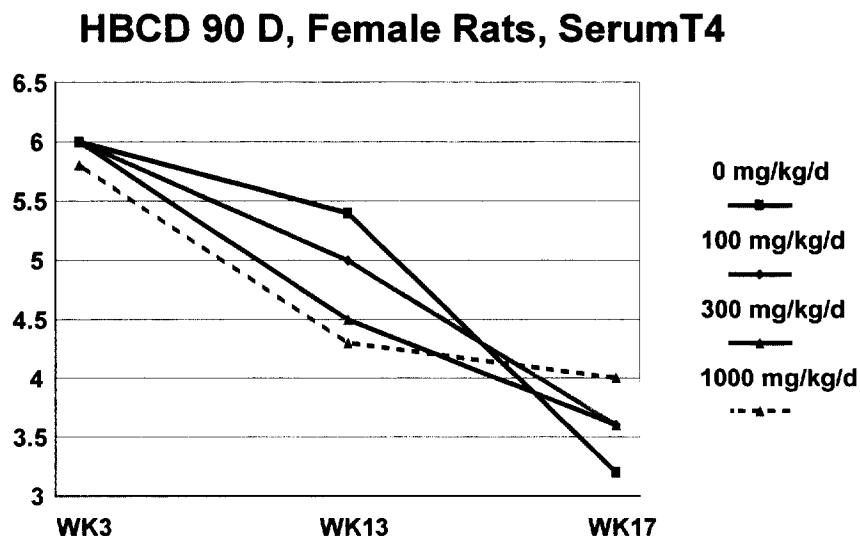
Individual Data: Tables 112,113, 114

Mean thyroxine ( $T_4$ ) levels were decreased compared to the control means in the 100, 300 and 1000 mg/kg/day group males, and 300 and 1000 mg/kg/day group females at study week 13 (statistically significant at  $p<0.05$  when compared to the control group). Mean  $T_4$  levels were comparable to control means at study week 17. Serum TSH and  $T_3$  levels in all dose groups were statistically comparable to the control means at study weeks 3, 13, or 17 (Text Figures 1, 2).

**Text Figure 1.** Mean serum T<sub>4</sub> levels in male rats at study weeks 3, 13, and 17. Means in treated animals were statistically different from the control mean at study week 13 only ( $p<0.01$ ).



**Text Figure 2.** Mean serum T<sub>4</sub> levels in female rats at study weeks 3, 13, and 17. Means in the mid and high dose groups were statistically different from the control mean at study week 13 only ( $p<0.05$ ).



**G. OPHTHALMIC EXAMINATIONS (TOXICOLOGY GROUPS)**

Summary Data: Tables 48, 49, 50

Individual Data: Tables 115, 116, 117

There were no test article-related oculopathic findings at any evaluation.

**H. ESTROUS CYCLE DATA (TOXICOLOGY GROUPS)**

Summary Data: Table 51

Individual Data: Table 118

The following table summarizes the relevant parameters used in the evaluation of the estrous cycle:

**Text Table 3: Estrous Cycles**

Dose Level (mg/kg/day)	Mean Estrus Cycle	One Occurrence or No Estrous Recorded	No. of Animals with Estrous Cycles of 6 Days or More	% Days in Diestrus
0	4.5	2	1	76.5
100	4.7	2	2	74.3
300	5.3	2	2	71.3
1000	5.2	4	2	75.9

None of these parameters were significantly affected by the test article. Thus, the test article had no adverse effect on the estrous cycles of females that received doses as high as 1000 mg/kg/day for 90 consecutive days.

**I. ANATOMIC PATHOLOGY (TOXICOLOGY GROUPS)**

**1. MACROSCOPIC EXAMINATION**

Summary Data: Tables 52, 53, 54

Individual Data: Tables 119,120, 121

No test article-related macroscopic effects were detected during gross necropsy at study weeks 13 or 17. Spontaneous lesions and incidental findings occurred in both the control and treated groups and were of the usual number, type and frequency observed for this strain.

## 2. ORGAN WEIGHTS

Summary Data: Tables 55, 56, 57, 58, 59, 60

Individual Data: Tables 122, 123, 124, 125, 126, 127

Test article-related increased mean liver weight (absolute, relative to final body weight and relative to brain weight) was noted in the 100, 300 and 1000 mg/kg/day group males and females at the primary necropsy (statistically significant at  $p<0.05$  or  $p<0.01$ ). This effect was consistent with the histopathological findings in the liver. Increased mean prostate weight (absolute, relative to final body weight and relative to brain weight;  $p<0.05$ ) in the 1000 mg/kg/day group males was also attributed to test article administration. No other remarkable differences were noted at the primary necropsy.

**Text Table 4. Mean Liver, Prostate and Thyroid/Parathyroid Weights at Study Weeks 13 and 17.**

Dose (mg/kg/day)	0		100		300		1000	
Sex	M	F	M	F	M	F	M	F
<b>Week 13, Mean Liver Weight</b>								
Absolute (g)	14.3	8.1	17.0*	9.9*	17.2*	10.6**	19.0**	12.4**
Relative to Body Wt	2.7	2.9	3.2**	3.6**	3.2**	3.6**	3.9**	4.3**
Relative to Brain Wt	702	437	821*	540**	846*	569**	953**	679**
<b>Week 13, Mean Prostate Weight</b>								
Absolute (g)	0.95	---	0.99	---	1.12	---	1.25*	---
Relative to Body Wt	0.180	---	0.185	---	0.210	---	0.255**	---
Relative to Brain Wt	46.4	---	47.8	---	55.5	---	62.7**	---
<b>Week 17, Mean Thyroid/Parathyroid Weight</b>								
Absolute (g)	0.029	0.016	0.031	0.020	0.028	0.022*	0.028	0.022*
Relative to Body Wt	0.005	0.006	0.006	0.007	0.005	0.008*	0.006	0.008*
Relative to Brain Wt	1.47	0.87	1.48	1.07	1.37	1.18*	1.42	1.19*

\* Statistically different from control mean ( $p<0.05$ ).

\*\* Statistically different from control mean ( $p<0.01$ ).

Increased mean liver weights completely, or nearly completely, resolved in all groups by the week 17 recovery necropsy. Prostate weights were similar to the control group at the recovery necropsy.

No other test article-related effects were noted on organ weights. Several statistically significant ( $p<0.05$  or  $p<0.01$ ) differences were noted at the recovery necropsy. Increased mean spleen weight was noted in the 300 mg/kg/day group males (absolute) and 100 and 300 mg/kg/day group females (relative to final body weight), when compared to the control group. Increased mean kidney weight (relative to final body weight) was noted in the 100, 300 and 1000 mg/kg/day group males, when compared to the control group. Also at study week 17, mean thyroid/parathyroid weights (absolute, relative to body weight, and relative to brain weight) were increased in females of the 300 and 1000 mg/kg/day doses compared to the control means ( $p<0.05$ ). These differences were probably not related to the test article since they occurred during the nondosing recovery period. No other remarkable differences were noted on organ weights.

3. MICROSCOPIC EXAMINATION

Summary Data: Tables 61, 62, 63

Individual Data: Tables 119, 120, 121

Histologic changes were graded as to incidence (number of animals affected) and severity (minimal, mild, moderate, severe or present). Liver and thyroid changes not indicative of frank toxicity were found in some treated animals (Text Table 5).

**Text Table 5. Histopathology results of the liver and thyroid (study week 13).**

Dose (mg/kg/day)	0		100		300		1000	
Sex	M	F	M	F	M	F	M	F
<b>LIVER</b>								
<b>No. examined</b>	10	10	10	10	10	10	9	10
Vacuolation, Hepatocellular	2/10	3/10	6/10	6/10	5/10	5/10	6/9	9/10
Minimal	1	3	5	6	4	3	5	5
Mild	1	--	1	--	1	1	1	2
Moderate	--	--	--	--	--	1	--	2
Necrosis	0/10	0/10	0/10	0/10	1/10	0/10	1/10	0/10
Minimal	--	--	--	--	1	--	1	--
Hypertrophy, Hepatocellular, Centrilobular	0/10	0/10	0/10	0/10	0/10	0/10	0/10	5/10
Minimal	--	--	--	--	--	--	--	2
Mild	--	--	--	--	--	--	--	3
<b>THYROID</b>								
<b>No. examined</b>	10	10	10	10	10	10	9	10
Hypertrophy, Follicular Cell	1/10	0/10	1/10	0/10	5/10	4/9	8/9	7/10
Minimal	1	--	1	--	5	4	7	3
Mild	--	--	--	--	--	--	1	4

At the 90-day sacrifice, the liver changes in male rats were characterized as minimal hepatocellular vacuolation. The vacuolation was characterized by clear variously sized cytoplasmic vacuoles located in the periportal to mid-zonal regions. Minimal hepatocellular vacuolation occurred in 10% of control males and ~50% of the males at 100, 300 and 1000 mg/kg/day. Minimal hepatocellular vacuolation was detected in the control and treated females (3/10; 6/10; 3/10; 5/10). A slight increase in the severity of this change was detected in 300 and 1000 mg/kg/day group females, but not in males, at low incidence. Mild and moderate hepatocellular vacuolation, respectively, was detected in 1/10 and 2/10 females in each of the 300 and 1000 mg/kg/day dose groups. In addition, an indication of centrilobular hepatocellular hypertrophy was detected in the 1000 mg/kg/day group females. Minimal and mild centrilobular hepatocellular hypertrophy was

detected in 20 and 30%, respectively, of the 1000 mg/kg/day group females.

Results of the Oil Red O (lipid) and PAS (glycogen) stains were as follows: minimal to moderate Oil Red O staining was noted in the periportal to midzonal areas in the control and treated animals. Little PAS staining was detected in any animal and, where detected, was primarily located in the centrilobular region. The PAS staining was abolished by pretreatment of the specimens with diastase. These findings suggest that the material contained in the vacuoles was lipid, and that further, the lipid was not present in unusually high amounts.

At the 90-day sacrifice, minimal thyroid follicular cell hypertrophy was detected in 1/10, 1/10, 5/10 and 7/9 male rats in the control, 100, 300 and 1000 mg/kg/day dose groups, respectively. Minimal thyroid follicular hypertrophy was detected in 4/10 and 3/10 females in the 300 and 1000 mg/kg/day dose groups, respectively. Mild thyroid follicular hypertrophy was detected in 1/10 males and 4/10 females in the 1000 mg/kg/day dose group.

At the recovery necropsy, the liver changes had resolved in all treated animals without any delayed or long-term toxic effects. The thyroid changes had also resolved in all males and in the 300 mg/kg/day dose group females, and had nearly completely resolved in the 1000 mg/kg/day dose group females.

Despite the increase in prostate weight (see Section V.I.2.) there were no definitive test article-related prostate findings noted histopathologically.

Granulomatous inflammation was detected in lungs of individual treated animals and was likely associated with the method of

administration of the test article, e.g. gavage, which allowed for aspiration of the test article.

There were no other histomorphologic changes present in any of the tissues evaluated that were related to oral administration of the test article.

**J. SPERM MOTILITY/VIABILITY, MORPHOLOGY, AND NUMBER (TOXICOLOGY GROUPS)**

Summary Data: Tables 64, 65, 66, 67, 68

Individual Data: Tables 128, 129, 130, 131, 132, 133, 134, 135, 136, 137

No test article-related effects on spermatogenic endpoints were detected.

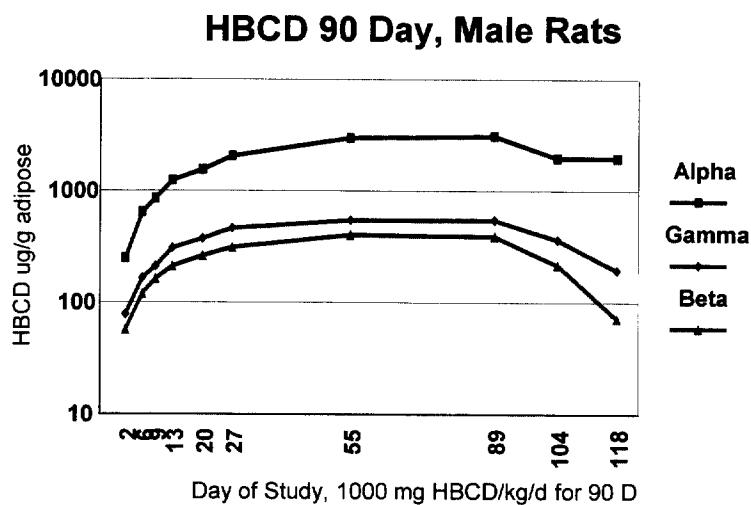
Sperm motility, morphology and number were similar between the control and treated groups ( $p<0.05$ ).

**K. DETERMINATION OF TEST ARTICLE FAT CONCENTRATION (SATELLITE GROUPS)**

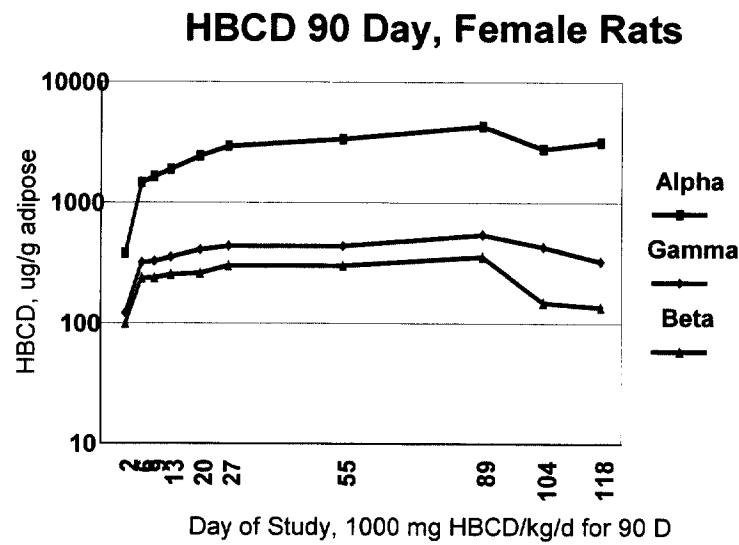
Data: Appendix J

HBCD was detected in the adipose tissue of male and female rats treated with 1000 mg/kg/day for up to 90 days (Text Figures 3 and 4). Isomer-specific analysis showed that the relative isomer concentrations in adipose tissue at all time points were alpha>>gamma>beta in contrast to the test article composition of gamma>>alpha>beta. The alpha isomer, present at ~6% of the test article, accounted for 65-70% of the total HBCD content in adipose at all time points. The gamma isomer, ~85% of the test article, accounted for 14-20% of the total HBCD content in adipose at all time points. The beta isomer, ~5% of the test article, accounted for 9-15% of the total HBCD content in adipose at all time points. Levels detected in male and female rats were similar at all time points and declined during the recovery period. Steady state levels were achieved by study day 27.

**Text Figure 3. Mean HBCD levels (2 rats/time point) in omental fat of male rats administered 1000 mg/kg/day.**



**Text Figure 4. Mean HBCD levels (2/day) in omental fat of female rats administered 1000 mg/kg/day.**



## VI. DISCUSSION AND CONCLUSIONS

HBCD, administered via gavage at doses up to 1000 mg/kg/day for 90 days, produced no adverse effects on mortality, clinical signs, body weight, food consumption, or on the results of the gross necropsy, functional observational battery, locomotor activity, urinalysis, hematology or serum chemistry evaluations. No adverse effects of treatment were detected on the results of vaginal cytology or on sperm motility/viability, morphology, and number.

Treatment with HBCD resulted in increased mean liver weights in all doses of both sexes at study week 13. This weight change completely, or nearly completely, resolved in all groups by the week 17 recovery necropsy. The increase in liver weight was not accompanied by serious morphologic or functional changes. Microscopic changes in the liver were not indicative of serious liver pathology. In addition, serum levels of enzymes indicative of liver pathology were not elevated and serum levels of components produced by the liver were not decreased.

In the absence of test article-related histopathologic and serum chemistry changes, increases in liver weight are considered an adaptive, rather than a toxic response, are not uncommon in the rat, and are most likely the result of microsomal induction<sup>1</sup>. Hepatic enzyme induction in the rat is known to produce an increase in liver weight and may occur without accompanying histologic changes. Some evidence of hepatic enzyme induction was detected microscopically and possibly enzymatically: minimal to mild hepatocellular centrilobular hypertrophy was detected in a few females in the 1000 mg/kg/day dose group and the mean serum GGT level in the 1000 mg/kg/day group males and females was statistically increased compared to the control mean. The magnitude of the protein changes was too slight to be of toxicological significance. The changes in GGT were not accompanied by histologic changes in the expected target organs (periportal liver and kidney) and were reversible. The

hepatic GGT content may be increased by enzyme-inducing xenobiotics, and this increase may be reflected in elevated activity of the enzyme in blood serum<sup>9,10</sup>.

Minimal thyroid follicular cell hypertrophy was detected at a higher incidence than in the control animals in the 300 and 1000 mg/kg/day group male and female rats at study week 13, and mild thyroid follicular cell hypertrophy was detected in some 1000 mg/kg/day group females and one 1000 mg/kg/day group male. In addition, serum T4 levels were depressed compared to the control mean at study week 13 in all dose groups except the 100 mg/kg/day group females. The reduction in serum T4 levels at study week 13 was not accompanied by evidence of toxicity or adverse effects, and the animals were clinically normal. T4 levels in treated animals were comparable to the control mean at study weeks 3 and 17, and T3 and TSH levels were unaffected by treatment at any time point.

Serum T4 levels in the rat are known to be sensitive to the effects of induction of hepatic UDP-glucuronyl transferase. The increased liver weights, histologic evidence of hepatic induction, and possible serologic evidence of hepatic enzyme induction (increased GGT blood levels) suggest that the reduction in T4 levels found in this study was related to an enhanced elimination of T4 due to induction of hepatic drug metabolizing enzymes. The minimal to mild thyroid follicular cell hypertrophy and increase in thyroid weight detected in some animals is the normal physiological response to depressed serum T4 levels.

Although mean prostate weight was increased in the 1000 mg/kg/day group males at study week 13, this increase was not accompanied by evidence of pathology on histologic exam. Further, the other components of the male reproduction system examined in this study (gross appearance, weight, histopathology, and sperm motility, morphology and number) were not affected by treatment.

HBCD was detected in the adipose tissue of male and female rats treated with 1000 mg/kg/day for up to 90 days. The majority of the HBCD content in adipose

tissue was composed of the alpha isomer. Isomer specific analysis showed that the relative isomer concentrations in adipose tissue at all time points were alpha>>gamma>beta and is in contrast to the test article composition (gamma>>alpha>beta). The alpha isomer, present as ~6% of the test article, accounted for 65-70% of the total HBCD content in adipose at all time points. The gamma isomer, ~85% of the test article, accounted for 14-20% of the total HBCD content in adipose at all time points. The beta isomer, ~5% of the test article, accounted for 9-15% of the total HBCD content in adipose at all time points. Levels in male and female rats were similar at all time points and declined during the recovery period. Steady state levels appeared to have been reached by day 27.

In conclusion, the potential test article-related changes were mild, reversible, secondary to hepatic induction, and there was no effect on the clinical condition of the animals. Based on the absence of toxicity observed in this study, the no-adverse-effect-level of HBCD administered to Crl:CD(SD)IGS BR rats by gavage in corn oil for 90 days was 1000 mg/kg/day, the highest dose tested.

WIL-186012  
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VII. KEY STUDY PERSONNEL AND REPORT SUBMISSION

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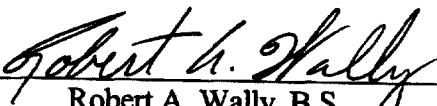
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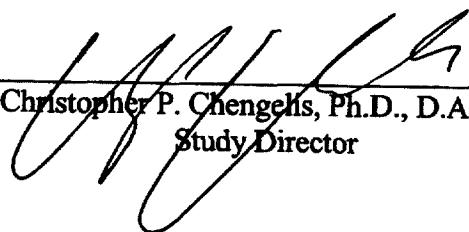
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VII. KEY STUDY PERSONNEL AND REPORT SUBMISSION (continued)

  
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Date

**VIII. QUALITY ASSURANCE UNIT STATEMENT**

<u>Date(s) of Inspection(s)</u>	<u>Phase Inspected</u>	<u>Date(s) Findings Reported to Study Director</u>	<u>Date(s) Findings Reported to Management</u>
4/25/00	Test Material Preparation/ Analysis	4/26/00	5/26/00
5/17/00	Blood Collection/Analysis	5/17/00	6/29/00
6/5/00	Animal Care/Equipment	6/6/00	7/31/00
7/24/00	Functional Observational Battery	7/24/00	8/31/00
7/26/00	Necropsy	7/26/00	8/31/00
8/14/00	Animal Care/Equipment	8/14/00	9/27/00
8/15/00	Detailed Physicals/Body Weights/Food Weights	8/15/00	9/27/00
8/16/00	Trimming of Tissues	8/16/00	9/27/00
8/23/00	Urine Collection/Analysis	8/23/00	9/27/00
8/23/00	Necropsy	8/24/00	9/27/00
12/8/00	Study Records (Rx-1)	12/8/00	1/31/01
12/5-6, 11/00	Study Records (I-1)	12/11/00	1/31/01
12/7, 15/00	Study Records (I-3)	12/15/00	1/31/01
12/6-7, 15/00	Study Records (I-2)	12/15/00	1/31/01
12/7, 15/00	Study Records (I-4)	12/15/00	1/31/01
12/8, 15, 19/00	Study Records (N-1)	12/19/00	1/31/01
12/11, 19/00	Study Records (N-2)	12/19/00	1/31/01
12/11-12, 19/00	Study Records (C-1 through C-4)	12/20/00	1/31/01
12/13, 15, 18-19, 21/00	Study Records (A-1 through A-8)	12/21/00	1/31/01
12/16, 18, 21/00	Draft Report (Analytical Chemistry)	12/21/00	1/31/01
1/4-5, 11/01	Study Records (H-1)	1/11/01	2/28/01
1/5, 11/01	Study Records (H-2)	1/11/01	2/28/01
1/5, 11/01	Study Records (P-1)	1/11/01	2/28/01
1/3-9, 13, 16-17/01	Draft Report (without Analytical Chemistry Appendix)	1/18/01	2/28/01
1/18/01	Microtoming of Tissues	1/18/01	2/28/01
3/14-15/01	Study Records (P-2 Additional Pathology Data)	3/15/01	4/30/01
12/9-10/01	Revised Draft Report	12/10/01	12/14/01

The study was inspected in accordance with the United States EPA Good Laboratory Practice Regulations, the OECD Principles of Good Laboratory Practice, the standard operating procedures of WIL Research Laboratories, Inc., and the protocol with the following exceptions. Data presented in Appendix A was the responsibility of Albemarle Corporation. Data presented in Appendix J was the responsibility of

WIL-186012  
CMA-BFRIP

Wildlife International. Quality Assurance findings, derived from the inspections during the conduct of the study and from the inspections of the raw data and the draft report, are documented and have been reported to the study director. A status report is submitted to management monthly.

This report accurately reflects the data generated during the study. The methods and procedures used in the study were those specified in the protocol, its amendments and the standard operating procedures of WIL Research Laboratories, Inc.

The raw data, retention sample(s), if applicable, and the final report will be stored in the Archives at WIL Research Laboratories, Inc., or another location specified by the sponsor.

Report Audited By:

Deborah L Little  
for: Lori J. Goodrich  
Auditor II, Quality Assurance

12/14/2001  
Date

Report Reviewed by:

Deborah L Little  
for: Lori A. Rush, B.S.  
Validation Specialist, Quality Assurance

12/14/2001  
Date

Deborah L Little  
Deborah L. Little, B.S., RQAP-GLP  
Manager II, Quality Assurance

12/14/2001  
Date

**IX. REFERENCES**

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X. DEVIATIONS FROM THE PROTOCOL

This study was conducted in accordance with the protocol and protocol amendments except for the following.

1. Section IV.B.4. Group 2 (100 mg/kg/day) female nos. 43419 and 43468, were found to be in the wrong cages on May 16, 2000. Female no. 43419 was overdosed by 17-20% and female no. 43468 was underdosed by 17-20% of their targeted doses from May 9, 2000 to May 16, 2000.
2. Section IV.B.5. Although not required by protocol, additional samples were collected after one and five days of storage and resuspended for homogeneity confirmation.
3. Section IV.O. The estrus stage for female no. 43478 (300 mg/kg/day) was not entered on July 27, 2000 (determination day 24) due to the inability to locate the slide.
4. Section IV.P.1. On August 23, 2000 (recovery necropsy), the following animals were euthanized with isoflurane instead of carbon dioxide: nos. 43295 and 43326 (Group 1 males); 43409 and 43423 (Group 1 females); 43400, 43413 and 43416 (Group 2 females); 43426 and 43461 (Group 3 females) and 43410 and 43421 (Group 4 females).
5. Section IV.Q.1. On August 23, 2000 (recovery necropsy) the right epididymis could not be positively identified for animal no. 43340 (Group 2). The left epididymis was excised, weighed and used for motility assessment.
6. Section IV.R. Weights were not collected for the omental/mesenteric fat samples collected on April 28, 2000.

These deviations did not negatively impact the quality or integrity of the data nor the outcome of the study.

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A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

Tables 1-137

TABLE 1  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF SURVIVAL AND DISPOSITION

GROUP :	1	LIVE FD EE SE				LIVE FD EE SE				LIVE FD EE SE				LIVE FD EE SE			
		2		3		4		5		6		7		8		9	
WEEK	LIVE	FD	EE	SE		LIVE	FD	EE	SE	LIVE	FD	EE	SE	LIVE	FD	EE	SE
0	15	0	0	0		15	0	0	0	15	0	0	0	15	0	0	0
1	15	0	0	0		15	0	0	0	15	0	0	0	14	1	0	0
2	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
3	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
4	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
5	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
6	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
7	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
8	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
9	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
10	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
11	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
12	15	0	0	0		15	0	0	0	15	0	0	0	14	0	0	0
13	5	0	10			5	0	10		5	0	10		5	0	0	9
14	5	0	0			5	0	0		5	0	0		5	0	0	0
15	5	0	0			5	0	0		5	0	0		5	0	0	0
16	5	0	0			5	0	0		5	0	0		5	0	0	0
17	0	0	5			0	0	5		0	0	5		0	0	5	

WEEK = WEEK OF STUDY    FD = FOUND DEAD    EE = EUTHANIZED IN EXTREMIS    SE = SCHEDULED EUTHANASIA

1 - 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

TABLE 1  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF SURVIVAL AND DISPOSITION

WEEK	LIVE	FD	EE	SE	FEMALES			
					1	2	3	4
0	15	0	0	0	15	0	0	0
1	15	0	0	0	15	0	0	0
2	15	0	0	0	15	0	0	0
3	15	0	0	0	15	0	0	0
4	15	0	0	0	15	0	0	0
5	15	0	0	0	15	0	0	0
6	15	0	0	0	15	0	0	0
7	15	0	0	0	15	0	0	0
8	15	0	0	0	15	0	0	0
9	15	0	0	0	15	0	0	0
10	15	0	0	0	15	0	0	0
11	15	0	0	0	15	0	0	0
12	15	0	0	0	15	0	0	0
13	5	0	0	10	5	0	10	5
14	5	0	0	0	5	0	0	5
15	5	0	0	0	5	0	0	5
16	5	0	0	0	5	0	0	5
17	0	0	5	0	0	5	0	0

WEEK = WEEK OF STUDY      FD = FOUND DEAD    EE = EUTHANIZED IN EXTREMIS    SE = SCHEDEDLED EUTHANASIA

1 - 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

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TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	M A L E		
	TABLE RANGE: GROUP:	04-26-00 TO 08-23-00	4
	1	2	3
NORMAL			
-NO SIGNIFICANT CLINICAL OBSERVATIONS	200/15	211/15	212/15
DISPOSITION			
-FOUND DEAD	0/ 0	0/ 0	0/ 0
-PRIMARY NECROPSY (INTERVAL 13)	10/10	10/10	10/10
-RECOVERY NECROPSY (INTERVAL 17)	5/ 5	5/ 5	5/ 5
BEHAVIOR/CNS			
-UNKEMPT APPEARANCE	0 / 0	0 / 0	0 / 0
BODY/INTEGUMENT			
-HAIR LOSS FORELIMB (S)	22 / 4	0 / 0	0 / 0
CARDIO-PULMONARY			
-RALES	0 / 0	0 / 0	0 / 0
EYES/EAR/NOSE			
-DRILLED RED MATERIAL AROUND RIGHT EYE	0 / 0	1 / 1	5 / 3
-DRILLED RED MATERIAL AROUND LEFT EYE	1 / 1	3 / 1	0 / 0
-CLEAR DISCHARGE LEFT EYE	0 / 0	1 / 1	0 / 0
-RED DISCHARGE LEFT EYE	0 / 0	1 / 1	0 / 0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	M A L E			
	1	04-26-00 TO 08-23-00	2	3
	4			4
EYES/EARS/NOSE				
- DRIED RED MATERIAL AROUND NOSE	2/ 2	0/ 0	1/ 1	1/ 1
- OPACITY LEFT EYE	1/ 1	0/ 0	0/ 0	0/ 0
EXCRETA				
- WET YELLOW MATERIAL UROGENITAL AREA	0/ 0	0/ 0	1/ 1	1/ 1
- SOFT FECES	1/ 1	1/ 1	0/ 0	0/ 0
- RED PENILE DISCHARGE	0/ 0	0/ 0	0/ 0	0/ 0
BODY/INTEG LI				
- SCABBING VENTRAL NECK AREA	0/ 0	0/ 0	1/ 1	1/ 1
- SCABBING END OF TAIL	0/ 0	0/ 0	1/ 1	0/ 0
- SCABBING UROGENITAL AREA	0/ 0	0/ 0	0/ 0	0/ 0
ORAL/DENTAL				
- WET CLEAR MATERIAL VENTRAL NECK	0/ 0	0/ 0	1/ 1	1/ 1
- WET CLEAR MATERIAL AROUND MOUTH	0/ 0	1/ 1	0/ 0	0/ 0
- UPPER INCISOR(S) MALALIGNED	1/ 1	0/ 0	9/ 1	0/ 0
- LOWER INCISOR(S) LONG, TRIMMED	0/ 0	2/ 2	7/ 1	0/ 0
- UPPER INCISOR(S) MISSING	0/ 0	0/ 0	1/ 1	0/ 0
- UPPER INCISOR(S) BROKEN	0/ 0	1/ 1	3/ 1	0/ 0
SPECIAL				
- PROLAPSED PENIS	0/ 0	0/ 0	0/ 0	0/ 0
				2/ 1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	M A L E			
	TABLE RANGE: GROUP:			
	04-26-00	TO	08-23-00	
	1		2	
				3
				4
BODY/INTEG III				
-WET CLEAR MATERIAL FORELIMB (S)				
-DRIED BROWN MATERIAL ANOGENITAL AREA	0/ 0		0/ 0	1/ 1
-WET BROWN MATERIAL ANOGENITAL AREA	2/ 2		0/ 0	0/ 0
-DRIED YELLOW MATERIAL UROGENITAL AREA	0/ 0		0/ 0	0/ 0
-WET YELLOW MATERIAL ANOGENITAL AREA	0/ 0		0/ 0	1/ 1
-WET YELLOW MATERIAL VENTRAL TRUNK	1/ 1		0/ 0	0/ 0
-DRIED BROWN MATERIAL UROGENITAL AREA	0/ 0		0/ 0	0/ 0
SPECIAL II				
-TAIL BROKEN	3/ 1		0/ 0	0/ 0
-END OF TAIL MISSING	0/ 0		4/ 1	0/ 0
-6MM X 6MM X 4MM FIRM IMMOVEABLE MASS	0/ 0		4/ 1	0/ 0
LEFT SIDE OF MOUTH				0/ 0
-3MM X 3MM X 2MM FIRM REDDENED				0/ 0
IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP	0/ 0		0/ 0	4/ 2
-5MM X 5MM X 5MM FIRM MOVEABLE MASS	0/ 0		0/ 0	0/ 0
UROGENITAL AREA				1/ 1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE: GROUP:		F E M A L E			
		04-26-00 TO 08-23-00	2	3	4
NORMAL	-NO SIGNIFICANT CLINICAL OBSERVATIONS	194/15	195/15	218/15	218/15
DISPOSITION					
	-PRIMARY NECROPSY (INTERVAL 13)	10/10	10/10	10/10	10/10
	-RECOVERY NECROPSY (INTERVAL 17)	5/ 5	5/ 5	5/ 5	5/ 5
BODY/INTEGRUMENT					
	-HAIR LOSS FORELIMB (S)	24/ 3	26/ 2	4/ 1	2/ 1
	-HAIR LOSS HINDLIMB (S)	0/ 0	5/ 2	0/ 0	0/ 0
EYES/EARS/NOSE					
	-DRIED RED MATERIAL AROUND RIGHT EYE	0/ 0	2/ 1	0/ 0	0/ 0
	-DRIED RED MATERIAL AROUND LEFT EYE	0/ 0	5/ 1	0/ 0	0/ 0
	-RED DISCHARGE RIGHT EYE	0/ 0	1/ 1	0/ 0	0/ 0
	-RED DISCHARGE LEFT EYE	0/ 0	3/ 1	0/ 0	0/ 0
	-DRIED RED MATERIAL AROUND NOSE	0/ 0	1/ 1	2/ 2	0/ 0
	-DRIED RED MATERIAL FACIAL AREA	0/ 0	1/ 1	0/ 0	0/ 0
EXCRETA					
	-WET YELLOW MATERIAL UROGENITAL AREA	0/ 0	0/ 0	0/ 0	0/ 0
BODY/INTEG II					
	-SCABBING FORELIMB (S)	1/ 1	1/ 1	1/ 1	1/ 1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE:		F E M A L E		
GROUP:		04-26-00 TO 08-23-00	2	3
		1	2	4
BODY/INTEG II				
-SCABBING END OF TAIL		2 / 1	0 / 0	1 / 1
ORAL/DENTAL				
-WET CLEAR MATERIAL AROUND MOUTH	0 / 0	0 / 0	0 / 0	0 / 0
-UPPER INCISOR(S) MALALIGNED	0 / 0	3 / 1	0 / 0	1 / 1
-LOWER INCISOR(S) LONG, TRIMMED	0 / 0	3 / 1	0 / 0	0 / 0
SPECIAL				
-SWOLLEN RIGHT EAR	0 / 0	0 / 0	2 / 1	0 / 0
-REDDENED RIGHT EAR	0 / 0	0 / 0	2 / 1	0 / 0
BODY/INTEG III				
-WET BROWN MATERIAL ANOGENITAL AREA	0 / 0	0 / 0	0 / 0	1 / 1
-DRIED YELLOW MATERIAL UROGENITAL AREA	0 / 0	1 / 1	1 / 1	0 / 0
-WET YELLOW MATERIAL ANOGENITAL AREA	0 / 0	0 / 0	0 / 0	1 / 1
-WET RED MATERIAL FORELIMB(S)	0 / 0	0 / 0	0 / 0	1 / 1
-DRIED RED MATERIAL FORELIMB(S)	0 / 0	1 / 1	0 / 0	0 / 0
SPECIAL II				
-TAIL BROKEN				
-15MM X 10MM X 5 MM FIRM, MOVABLE MASS	10 / 1	0 / 0	0 / 0	0 / 0
LEFT FORELIMB	0 / 0	0 / 0	0 / 0	4 / 1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

PAGE 6

TABLE RANGE:		F E M A L E			
GROUP:		04-26-00 TO 08-23-00	2	3	4
SPECIAL I					
-END OF TAIL MISSING		9/ 0	0/ 0	1/ 1	0/ 0
-5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	4/ 1
-5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	1/ 1
-7MM X 7MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	1/ 1
-10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	4/ 1
-5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	1/ 1
-7MM X 7MM X 3MM FIRM, MOVABLE, SCABBING, RUPTURED, PURULENT DISCHARGE, MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	1/ 1
-3MM X 3MM X 3MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	2/ 1
-3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	1/ 1	0/ 0
-2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS ON RIGHT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	3/ 1	0/ 0
-2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS LEFT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	1/ 1	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 2 (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE:		F E M A L E			
GROUP:		04-26-00 TO 08-23-00	2	3	4
SPECIAL II					
-30MM X 20MM X 10MM FIRM, IMMOVEABLE,		0/ 0	0/ 0	0/ 0	0/ 0
RUPTURED, RED DISCHARGE, SCABBING MASS LEFT FORELIMB		2/ 2	2/ 2	1/ 1	1/ 1
-ESTROUS SMEAR DETERMINED TO BE ESTROUS					
PRIOR TO NECROPSY					
-ESTROUS SMEAR DETERMINED TO METESTROUS		0/ 0	1/ 1	2/ 2	1/ 1
PRIOR TO NECROPSY					
-ESTROUS SMEAR DETERMINED TO BE		8/ 8	7/ 7	6/ 6	8/ 8
DIESTROUS PRIOR TO NECROPSY					
-SLIDE UNAVAILABLE; UNABLE TO DETERMINE		0/ 0	0/ 0	1/ 1	0/ 0
ESTROUS STAGE					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

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TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	M A L E		
TABLE RANGE: GROUP:	1	04-26-00 TO 07-28-00	2
			3
			4
NORMAL			
-NO SIGNIFICANT CLINICAL OBSERVATIONS	183/15	188/15	191/15
DISPOSITION			
-FOUND DEAD	0/0	0/0	0/0
-PRIMARY NECROPSY (INTERVAL 13)	10/10	10/10	10/10
BEHAVIOR/CNS			
-UNKEMPT APPEARANCE	0/0	0/0	0/0
BODY/INTEGUMENT			
-HAIR LOSS FORELIMB (S)	18/4	0/0	0/0
CARDIO-PULMONARY			
-RALES	0/0	0/0	0/0
EYES/EARNS/NOSE			
-DRIED RED MATERIAL AROUND RIGHT EYE	0/0	1/1	5/3
-DRIED RED MATERIAL AROUND LEFT EYE	1/1	2/1	0/0
CLEAR DISCHARGE LEFT EYE	0/0	1/1	0/0
-RED DISCHARGE LEFT EYE	0/0	1/1	0/0
-DRIED RED MATERIAL AROUND NOSE	2/2	0/0	1/1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE: GROUP:		M A L E		
		04-25-00 TO 07-28-00	2	3
		1	2	4
EXCRETA				
-WET YELLOW MATERIAL UROGENITAL AREA		0/ 0	0/ 0	1/ 1
-SOFT FECES		1/ 1	0/ 0	2/ 2
BODY/INTEG II				
-SCABBING VENTRAL NECK AREA		0/ 0	0/ 0	1/ 1
-SCABBING END OF TAIL		0/ 0	1/ 1	0/ 0
- SCABBING UROGENITAL AREA		0/ 0	0/ 0	0/ 0
ORAL/DENTAL				
-WET CLEAR MATERIAL VENTRAL NECK		0/ 0	0/ 0	1/ 1
-WET CLEAR MATERIAL AROUND MOUTH		0/ 0	1/ 1	0/ 0
-UPPER INCISOR (S) MALALIGNED		1/ 1	0/ 0	6/ 1
-LOWER INCISOR (S) LONG, TRIMMED		0/ 0	2/ 2	4/ 1
-UPPER INCISOR (S) BROKEN		0/ 0	1/ 1	1/ 1
SPECIAL				
-PROLAPSED PENIS		0/ 0	0/ 0	0/ 0
BODY/INTEG III				
-WET CLEAR MATERIAL FORELIMB (S)				
DRIED BROWN MATERIAL ANOGENITAL AREA		0/ 0	0/ 0	1/ 1
2/ 2		0/ 0	0/ 0	1/ 1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

M A L E			
TABLE RANGE: GROUP:	1	04-26-00 TO 07-28-00	2
BODY/INTEG III			
-WET BROWN MATERIAL ANOGENITAL AREA	0/ 0	0/ 0	0/ 0
-DRIED YELLOW MATERIAL UROGENITAL AREA	0/ 0	0/ 0	1/ 0
-WET YELLOW MATERIAL ANOGENITAL AREA	1/ 1	0/ 0	2/ 1
-WET YELLOW MATERIAL VENTRAL TRUNK	0/ 0	0/ 0	0/ 0
-DRIED BROWN MATERIAL UROGENITAL AREA	0/ 0	0/ 0	1/ 1
SPECIAL III			
-END OF TAIL MISSING	0/ 0	4/ 1	0/ 0
-6MM X 6MM X 4MM FIRM IMMOVEABLE MASS	0/ 0	4/ 1	0/ 0
LEFT SIDE OF MOUTH			
-3MM X 3MM X 2MM FIRM REDDENED	0/ 0	0/ 0	0/ 0
IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP			
-5MM X 5MM X 5MM FIRM MOVEABLE MASS	0/ 0	0/ 0	0/ 0
UROGENITAL AREA			
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

F E M A L E			
	TABLE RANGE: GROUP:	04-26-00 TO 07-28-00	3
	1	2	4
NORMAL			
-NO SIGNIFICANT CLINICAL OBSERVATIONS		172/15	177/15
DISPOSITION			
-PRIMARY NECROPSY (INTERVAL 13)		10/10	10/10
BODY/INTEGUMENT			
-HAIR LOSS FORELIMB (S)	21/ 3	26/ 2	4/ 1
-HAIR LOSS HINDLIMB (S)	0/ 0	3/ 2	0/ 0
EYES/EARS/NOSE			
-DRIED RED MATERIAL AROUND NOSE	0/ 0	0/ 0	2/ 2
EXCRETA			
-WET YELLOW MATERIAL UROGENITAL AREA	0/ 0	0/ 0	0/ 0
BODY/INTEG II			
-SCABBING FORELIMB (S)	1/ 1	1/ 1	0/ 0
-SCABBING END OF TAIL	2/ 1	0/ 0	1/ 1
ORAL/DENTAL			
-WET CLEAR MATERIAL AROUND MOUTH	0/ 0	0/ 0	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	F E M A L E				
	TABLE RANGE: GROUP:	04-26-00 TO 07-28-00 1	04-26-00 TO 07-28-00 2	04-26-00 TO 07-28-00 3	04-26-00 TO 07-28-00 4
ORAL/DENTAL					
-UPPER INCISOR (S) MALALIGNED		0/ 0	0/ 0	0/ 0	0/ 0
SPECIAL					
-SWOLLEN RIGHT EAR		0/ 0	0/ 0	2/ 1	0/ 0
-REDDENED RIGHT EAR		0/ 0	0/ 0	2/ 1	0/ 0
BODY / INTEG III					
-WET BROWN MATERIAL ANOGENITAL AREA		0/ 0	0/ 0	0/ 0	1/ 1
-DRIED YELLOW MATERIAL UROGENITAL AREA		0/ 0	0/ 0	1/ 1	0/ 0
-WET YELLOW MATERIAL ANOGENITAL AREA		0/ 0	0/ 0	0/ 0	1/ 1
-WET RED MATERIAL FORELIMB (S)		0/ 0	0/ 0	0/ 0	1/ 1
SPECIAL I-I					
-TAIL BROKEN		10/ 1	0/ 0	0/ 0	0/ 0
-15MM X 10MM X 5 MM FIRM, MOVABLE MASS		0/ 0	0/ 0	0/ 0	4/ 1
LEFT FORELIMB					
-END OF TAIL MISSING		0/ 0	0/ 0	1/ 1	0/ 0
-5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT		0/ 0	0/ 0	0/ 0	4/ 1
FORELIMB					
-5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING		0/ 0	0/ 0	0/ 0	1/ 1
MASS LEFT FORELIMB					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE: GROUP:		F E M A L E			
		1	04-26-00 TO 07-28-00	2	3
		1		2	4
SPECIAL II					
-7MM X 7MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-7MM X 7MM X 3MM FIRM, MOVABLE, RUPTURED, PURULENT DISCHARGE, MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-3MM X 3MM X 3MM FIRM, MOVABLE MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	0/ 0	0/ 0
-2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS ON RIGHT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	0/ 0	0/ 0
-2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS LEFT SIDE OF MOUTH ON LIP		0/ 0	0/ 0	0/ 0	0/ 0
-30MM X 20MM X 10MM FIRM, IMMOVEABLE, RUPTURED, RED DISCHARGE, SCABBING MASS LEFT FORELIMB		0/ 0	0/ 0	0/ 0	0/ 0
-ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY		2/ 2	2/ 2	1/ 1	1/ 1
-ESTROUS SMEAR DETERMINED TO METESTROUS PRIOR TO NECROPSY		0/ 0	1/ 1	2/ 2	1/ 1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA

TABLE 2A (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - DOSING PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

F E M A L E					
TABLE RANGE:		04-26-00 TO 07-28-00			
GROUP:		1	2	3	4
SPECIAL LI					
-ESTROUS SMEAR DETERMINED TO BE					
DIESTROUS PRIOR TO NECROPSY	8 / 8		7 / 7	6 / 6	8 / 8
-SLIDE UNAVAILABLE; UNABLE TO DETERMINE	0 / 0		0 / 0	1 / 1	0 / 0
ESTROUS STAGE					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

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12/06/2000

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TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

		- M A L E -	
TABLE RANGE: GROUP:		1	07-27-00 TO 08-23-00
		2	3
NORMAL			
-NO SIGNIFICANT CLINICAL OBSERVATIONS		21/ 9	30/12
DISPOSITION			
-PRIMARY NECROPSY (INTERVAL 13)		7/ 7	7/ 7
-RECOVERY NECROPSY (INTERVAL 17)		5/ 5	5/ 5
BODY/INTEGRIMENT			
-HAIR LOSS FORELIMB (S)		5/ 2	0/ 0
CARDIO-PULMONARY			
-RALES		0/ 0	0/ 0
EYES/EARS/NOSE			
-DRIED RED MATERIAL AROUND LEFT EYE		1/ 1	1/ 1
-DRIED RED MATERIAL AROUND NOSE		1/ 1	0/ 0
-OPACITY LEFT EYE		1/ 1	0/ 0
EXCRETA			
-WET YELLOW MATERIAL UROGENITAL AREA		0/ 0	0/ 0
-SOFT FECES		0/ 0	1/ 1
-RED PENILE DISCHARGE		0/ 0	0/ 0

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA

TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	TABLE RANGE: GROUP:		M A L E			
	1	07-27	00 TO 08-23	00	2	3
BODY/INTEG II SCABBING UROGENITAL AREA	0/ 0		0/ 0		0/ 0	1/ 1
ORAL/DENTAL						
-WET CLEAR MATERIAL VENTRAL NECK	0/ 0		0/ 0		0/ 0	1/ 1
-WET CLEAR MATERIAL AROUND MOUTH	0/ 0		0/ 0		0/ 0	1/ 1
-UPPER INCISOR (S) MALALIGNED	1/ 1		0/ 0		3/ 1	0/ 0
-LOWER INCISOR (S) LONG, TRIMMED	0/ 0		0/ 0		3/ 1	0/ 0
-UPPER INCISOR (S) MISSING	0/ 0		0/ 0		1/ 1	0/ 0
-UPPER INCISOR (S) BROKEN	0/ 0		0/ 0		2/ 1	0/ 0
SPECIAL						
-PROLAPSED PENIS	0/ 0		0/ 0		0/ 0	1/ 1
BODY/INTEG III						
-WET CLEAR MATERIAL FORELIMB (S)	0/ 0		0/ 0		0/ 0	1/ 1
-DRIED BROWN MATERIAL ANOGENITAL AREA	2/ 2		0/ 0		0/ 0	0/ 0
-WET BROWN MATERIAL ANOGENITAL AREA	0/ 0		0/ 0		0/ 0	1/ 1
-DRIED YELLOW MATERIAL UROGENITAL AREA	0/ 0		0/ 0		1/ 1	1/ 1
-WET YELLOW MATERIAL UROGENITAL AREA	1/ 1		0/ 0		0/ 0	0/ 0
-WET YELLOW MATERIAL VENTRAL TRUNK	0/ 0		0/ 0		0/ 0	1/ 1
-DRIED BROWN MATERIAL UROGENITAL AREA	0/ 0		0/ 0		1/ 1	0/ 0

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO. : WIL-186012  
SPONSOR: CMA

TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

M A L E			
TABLE RANGE: GROUP:			
07-27-00 TO 08-23-00			
	1	2	3
SPECIAL I			
-TAIL BROKEN	3/ 1	0/ 0	0/ 0
-3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP	0/ 0	0/ 0	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	F E M A L E		
	TABLE RANGE: GROUP:	07-27-00 TO 08-23-00	
		1	2
NORMAL			3
-NO SIGNIFICANT CLINICAL OBSERVATIONS		27/10	23/ 9
DISPOSITION			27/ 9
-PRIMARY NECROPSY (INTERVAL 13)		7/ 7	7/ 7
-RECOVERY NECROPSY (INTERVAL 17)		5/ 5	5/ 5
BODY/INTEGRUMENT			31/11
-HAIR LOSS FORELIMB (S)		3/ 1	2/ 2
-HAIR LOSS HINDLIMB (S)		0/ 0	2/ 1
EYES/EARS/NOSE			
-DRIED RED MATERIAL AROUND RIGHT EYE		0/ 0	2/ 1
-DRIED RED MATERIAL AROUND LEFT EYE		0/ 0	5/ 1
-RED DISCHARGE RIGHT EYE		0/ 0	1/ 1
-RED DISCHARGE LEFT EYE		0/ 0	3/ 1
-DRIED RED MATERIAL AROUND NOSE		0/ 0	1/ 1
-DRIED RED MATERIAL FACIAL AREA		0/ 0	1/ 1
BODY/INTEG II			
-SCABBING FORELIMB (S)		0/ 0	0/ 0
-SCABBING END OF TAIL		1/ 1	1/ 1
1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY			

TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

F E M A L E			
TABLE RANGE: GROUP:	07-27-00 TO 08-23-00	2	3
			4
ORAL/DENTAL			
-UPPER INCISOR(S) MALAIGNED	0/ 0	3/ 1	0/ 0
-LOWER INCISOR(S) LONG, TRIMMED	0/ 0	3/ 1	0/ 0
SPECIAL			
-SWOLLEN RIGHT EAR	0/ 0	0/ 0	1/ 1
-REDDENED RIGHT EAR	0/ 0	0/ 0	1/ 1
BODY/INTEG III			
-WET BROWN MATERIAL ANOGENITAL AREA	0/ 0	0/ 0	0/ 0
-DRIED YELLOW MATERIAL UROGENITAL AREA	0/ 0	1/ 1	1/ 1
-WET YELLOW MATERIAL ANOGENITAL AREA	0/ 0	0/ 0	0/ 0
-WET RED MATERIAL FORELIMB (S)	0/ 0	0/ 0	0/ 0
-DRIED RED MATERIAL FORELIMB (S)	0/ 0	1/ 1	1/ 1
SPECIAL I			
-TAIL BROKEN	1/ 1	0/ 0	0/ 0
-END OF TAIL MISSING	0/ 0	0/ 0	0/ 0
-2MM X 2MM X 1MM FIRM REDDENED	0/ 0	0/ 0	0/ 0
IMMOVEABLE MASS ON RIGHT SIDE OF MOUTH ON LIP	0/ 0	0/ 0	0/ 0
-30MM X 20MM X 10MM FIRM, IMMOVEABLE, RUPTURED, RED DISCHARGE, SCABBING MASS LEFT FORELIMB	0/ 0	0/ 0	1/ 1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA

TABLE 2B (DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

F E M A L E			
TABLE RANGE: GROUP:	07-27-00 TO 08-23-00	1	2
SPECIAL II		3	4
-ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY	2 / 2	2 / 2	0 / 0
-ESTROUS SMEAR DETERMINED TO METESTROUS PRIOR TO NECROPSY	0 / 0	1 / 1	2 / 2
-ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY	5 / 5	4 / 4	4 / 4
-SLIDE UNAVAILABLE; UNABLE TO DETERMINE ESTROUS STAGE	0 / 0	0 / 0	1 / 1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY

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12/06/2000

TABLE 3 (1-HOUR POST-DOSING)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

	M A L E		
	1-HOUR POST-DOSE		
	04-26-00	TO 07-27-00	
TABLE RANGE:	1	2	3
GROUP:			4
BEHAVIOR/CNS			
-UNKEMPT APPEARANCE	0/ 0	0/ 0	0/ 0
CARDIO-PULMONARY			
-RALES	0/ 0	1/ 1	0/ 0
EYES/EARS/NOSE			
-DRIED RED MATERIAL AROUND RIGHT EYE	0/ 0	1/ 1	3/ 1
-DRIED RED MATERIAL AROUND LEFT EYE	0/ 0	12/ 1	0/ 0
-RED DISCHARGE RIGHT EYE	0/ 0	0/ 0	1/ 1
-CLEAR DISCHARGE LEFT EYE	0/ 0	2/ 1	0/ 0
EXCRETA			
-WET YELLOW MATERIAL UROGENITAL AREA	0/ 0	1/ 1	0/ 0
-SOFT FECES	0/ 0	0/ 0	0/ 0
ORAL/DENTAL			
-WET CLEAR MATERIAL VENTRAL NECK	0/ 0	0/ 0	1/ 1
-WET CLEAR MATERIAL AROUND MOUTH	0/ 0	0/ 0	2/ 2
BODY/INTEG III			
-WET CLEAR MATERIAL FORELIMB (S)	0/ 0	0/ 0	0/ 0
1 - 0 MG/KG/DAY      2 - 100 MG/KG/DAY      3 - 300 MG/KG/DAY      4 - 1000 MG/KG/DAY			1/ 1

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 3 (1-HOUR POST-DOSING)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

		M A L E			
		04-26-00 TO 07-27-00			
TABLE RANGE:		1	2	3	4
1-HOUR POST-DOSE					
BODY/INTEG III					
- DRIED BROWN MATERIAL ANOGENITAL AREA	0 / 0	0 / 0	0 / 0	0 / 0	5 / 2
- WET BROWN MATERIAL ANOGENITAL AREA	1 / 1	0 / 0	0 / 0	0 / 0	1 / 1
- DRIED YELLOW MATERIAL UROGENITAL AREA	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1
- WET YELLOW MATERIAL ANOGENITAL AREA	2 / 2	0 / 0	0 / 0	0 / 0	0 / 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 3 (1-HOUR POST-DOSING)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

TABLE RANGE:		F E M A L E			
GROUP:		1	04-26-00 TO 07-27-00	2	3
1-HOUR POST-DOSE					
EYES/EARS/NOSE					
-CLEAR DISCHARGE EYE		0/ 0	0/ 0	0/ 0	0/ 0
-DRIED RED MATERIAL FACIAL AREA		0/ 0	0/ 0	0/ 0	0/ 0
EXCRETA					
-WET YELLOW MATERIAL UROGENITAL AREA		0/ 0	0/ 0	0/ 0	0/ 0
-SOFT FECES		0/ 0	0/ 0	0/ 0	0/ 0
ORAL/DENTAL					
-WET CLEAR MATERIAL VENTRAL NECK		0/ 0	0/ 0	0/ 0	0/ 0
-WET CLEAR MATERIAL AROUND MOUTH		0/ 0	0/ 0	0/ 0	0/ 0
BODY/INTEG III					
-WET CLEAR MATERIAL FORELIMB (S)		0/ 0	0/ 0	0/ 0	0/ 0
-WET CLEAR MATERIAL VENTRAL TRUNK		0/ 0	0/ 0	0/ 0	0/ 0
-DRIED YELLOW MATERIAL UROGENITAL AREA		0/ 0	0/ 0	0/ 0	0/ 0
-DRIED YELLOW MATERIAL ANOGENITAL AREA		0/ 0	0/ 0	0/ 0	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

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12/06/2000  
R: 07/18/2001

PROJECT NO.: WIL-186012  
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TABLE 4 (DAILY OBSERVATIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

M A L E				
TABLE RANGE: GROUP:				
07-26-00 TO 08-22-00				
EYES/EARS/NOSE				
-DRILLED RED MATERIAL AROUND LEFT EYE	0/ 0	0/ 0	1/ 1	0/ 0
-DRILLED RED MATERIAL AROUND NOSE	0/ 0	1/ 1	1/ 1	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 4 (DAILY OBSERVATIONS - RECOVERY PERIOD)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

F E M A L E			
TABLE RANGE: GROUP:	1	07-26-00 TO 08-22-00	2
	1	3	4
<b>EYES/EARS/NOSE</b>			
- DRIED RED MATERIAL AROUND RIGHT EYE	0/ 0	1/ 1	0/ 0
- DRIED RED MATERIAL AROUND LEFT EYE	0/ 0	4/ 1	0/ 0
- RED DISCHARGE RIGHT EYE	0/ 0	1/ 1	0/ 0
- RED DISCHARGE LEFT EYE	0/ 0	3/ 1	0/ 0
<b>EXCRETA</b>			
- RED MATERIAL ON CAGE FLOOR	0/ 0	0/ 0	0/ 0
- DEFECATION DECREASED	0/ 0	3/ 1	0/ 0
- FECES SMALLER THAN NORMAL	0/ 0	1/ 1	0/ 0
- RECTAL MUCCOUS EXUDATE	0/ 0	0/ 0	1/ 1
<b>BODY/INTEG. III</b>			
- DRIED BROWN MATERIAL ANOGENITAL AREA	0/ 0	1/ 1	0/ 0
- DRIED YELLOW MATERIAL UROGENITAL AREA	0/ 0	6/ 1	0/ 0
- DRIED BROWN MATERIAL UROGENITAL AREA	0/ 0	1/ 1	0/ 0
- DRIED RED MATERIAL FORELIB(S)	0/ 0	1/ 1	0/ 0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

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12/06/2000  
R:07/18/2001

TABLE 5  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
-1		206.	15.5	15	207.	17.2	15	207.	15.3	15	206.	15.1	15
0	MEAN	243.	15.7	15	243.	17.1	15	243.	19.4	15	241.	16.5	15
1	MEAN	295.	21.3	15	292.	28.4	15	297.	22.8	15	295.	21.8	15
2	MEAN	332.	26.4	15	331.	35.1	15	338.	29.5	15	336.	25.7	14
3	MEAN	364.	28.3	15	363.	38.5	15	371.	33.3	15	367.	31.1	14

None significantly different from control group

TABLE 5  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	M A L E			F E M A L E		
		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
4	MEAN	394.	390.	400.	394.	36.0	33.6
	S.D.	29.4	41.1	36.0		15	14
	N	15	15	15			
5	MEAN	421.	418.	427.	420.	39.9	36.9
	S.D.	31.2	43.5	39.9		15	14
	N	15	15	15			
6	MEAN	446.	443.	456.	446.	43.1	41.1
	S.D.	30.3	45.9	43.1		15	14
	N	15	15	15			
7	MEAN	466.	460.	472.	459.	43.5	41.1
	S.D.	31.5	48.1	46.2		15	14
	N	15	15	15			
8	MEAN	482.	480.	489.	471.	46.5	47.3
	S.D.	33.0	49.8	47.3		15	14
	N	15	15	15			

None significantly different from control group

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
9		498.	33.9	15				494.	52.2	15	505.	49.1	15
	MEAN				S.D.								
	S.D.				N								
	N												
10		513.	35.5	15				509.	56.1	15	520.	50.6	15
	MEAN				S.D.								
	S.D.				N								
	N												
11		526.	35.9	15				521.	57.0	15	536.	55.3	15
	MEAN				S.D.								
	S.D.				N								
	N												
12		540.	36.1	15				538.	61.5	15	550.	54.3	15
	MEAN				S.D.								
	S.D.				N								
	N												
13		547.	37.6	15				540.	66.3	15	556.	55.0	15
	MEAN				S.D.								
	S.D.				N								
	N												

None significantly different from control group

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
14		548.	41.2	5	514.	92.9	5	554.	55.9	5	508.	65.2	5
15		560.	35.3	5	519.	88.2	5	559.	54.8	5	517.	71.1	5
16		568.	32.0	5	523.	90.1	5	563.	55.3	5	522.	69.4	5
17		578.	28.0	5	535.	90.1	5	570.	54.4	5	532.	70.0	5

None significantly different from control group

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:				F E M A L E			1000 MG/KG/DAY		
				0 MG/KG/DAY			300 MG/KG/DAY		
WEEK	-1	MEAN	S.D.	MEAN	S.D.	N	MEAN	S.D.	N
0	0	MEAN	S.D.	159.	15.4	15	159.	14.5	15
		S.D.	N						
1	1	MEAN	S.D.	178.	14.2	15	176.	16.4	15
		S.D.	N						
2	2	MEAN	S.D.	205.	17.3	15	201.	18.3	15
		S.D.	N						
3	3	MEAN	S.D.	220.	19.7	15	220.	20.4	15
		S.D.	N						

None significantly different from control group

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBPCD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	F E M A L E			M A L E			1000 MG/KG/DAY
		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	
4	MEAN S.D. N	250. 22.2 15	241. 20.1 15	249. 24.5 15	250. 31.4 15			
5	MEAN S.D. N	259. 23.6 15	253. 23.6 15	259. 24.5 15	258. 33.2 15			
6	MEAN S.D. N	268. 24.8 15	263. 24.8 15	272. 27.5 15	270. 31.1 15			
7	MEAN S.D. N	274. 25.6 15	268. 24.8 15	276. 29.0 15	274. 32.9 15			
8	MEAN S.D. N	279. 24.0 15	272. 26.7 15	282. 29.9 15	282. 32.8 15			

None significantly different from control group

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
9		284.	25.2	15	276.	27.4	15	289.	30.3	15	289.	35.4	15
10		287.	27.5	15	280.	28.3	15	294.	30.9	15	295.	36.6	15
11		290.	24.9	15	285.	28.7	15	298.	32.8	15	298.	38.7	15
12		298.	26.5	15	292.	31.0	15	306.	34.6	15	307.	42.7	15
13		297.	26.7	15	291.	32.6	15	303.	37.1	15	307.	41.1	15

None significantly different from control group

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 5  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHTS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP :	F E M A L E			1000 MG/KG/DAY
		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	
14	MEAN S.D. N	294. 29.5 5	285. 35.7 5	284. 38.1 5	300. 40.0 5
15	MEAN S.D. N	298. 34.4 5	289. 40.4 5	290. 40.3 5	302. 42.4 5
16	MEAN S.D. N	300. 33.0 5	293. 35.5 5	291. 44.2 5	304. 40.0 5
17	MEAN S.D. N	306. 34.6 5	299. 30.1 5	297. 41.3 5	308. 40.0 5

None significantly different from control group

PBFSTv4.16  
11/20/2000  
R:07/18/2001

TABLE 6  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
-1 TO 0		37. 5.2 15			37. 5.0 15			36. 5.5 15			35. 7.6 15		
0 TO 1		52. 7.3 15			49. 14.6 15			55. 5.4 15			54. 7.3 15		
1 TO 2		37. 10.7 15			39. 10.4 15			41. 8.3 15			42. 8.0 14		
2 TO 3		33. 6.7 15			32. 6.6 15			33. 8.1 15			31. 9.1 14		
3 TO 4		29. 8.3 15			27. 6.7 15			29. 9.0 15			28. 7.7 14		

None significantly different from control group

TABLE 6  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			M A L E			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
4 TO 5		27. 4.9 15			28. 5.6 15			27. 7.0 15			26. 6.5 14					
5 TO 6		26. 5.2 15			25. 3.5 15			29. 5.7 15			25. 6.4 14					
6 TO 7		19. 4.7 15			17. 5.2 15			16. 5.8 15			13. ** 4.4 14					
7 TO 8		17. 5.0 15			20. 4.6 15			17. 7.2 15			12. 4.6 14					
8 TO 9		16. 5.6 15			14. 3.8 15			16. 5.6 15			13. 5.1 14					

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 6  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M A L E			F E M A L E			M A L E			F E M A L E		
9 TO 10	MEAN	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
	S.D.	5.1	5.1	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	N	15	15	15	15	15	15	15	15	15	15	15	15
10 TO 11	MEAN	13.	13.	12.	12.	17.	17.						
	S.D.	4.5	4.5	4.3	4.3	6.7	6.7						
	N	15	15	15	15	15	15						
11 TO 12	MEAN	14.	14.	17.	17.								
	S.D.	5.6	5.6	7.3	7.3								
	N	15	15	15	15								
12 TO 13	MEAN	7.	7.										
	S.D.	5.9	5.9										
	N	15	15										
13 TO 14	MEAN	3.	3.	2.	2.	5.	5.						
	S.D.	6.5	6.5	7.3	7.3	7.7	7.7						
	N	5	5	15	15	15	15						

\* = Significantly different from the control group at 0.05 using Dunnett's test  
 \*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 6  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E			M A L E			M A L E		M A L E	
14 TO 15	MEAN	12.		4.			5.			5.		9.	
	S.D.	10.2		5.9			6.4			6.6		6.6	
	N	5		5			5			5		5	
15 TO 16	MEAN	8.		4.			4.			4.		5.	
	S.D.	3.4		3.6			4.5			4.5		5.1	
	N	5		5			5			5		5	
16 TO 17	MEAN	10.		11.			7.			10.		8.2	
	S.D.	5.1		1.1			8.0			8.5		8.2	
	N	5		5			5			5		5	

None significantly different from control group

TABLE 6  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
0 TO 1	0	19. 4.8 15			17. 4.8 15			20. 5.1 15			17. 4.0 15		
1 TO 2	1	27. 6.3 15			26. 7.8 15			27. 8.7 15			31. 7.8 15		
2 TO 3	2	15. 8.6 15			18. 7.8 15			20. 8.5 15			22. 9.1 15		
3 TO 4	3	16. 8.4 15			11. 4.9 15			13. 7.1 15			11. 8.8 15		

None significantly different from control group

TABLE 6  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
4 TO 5		9. 6.4 15			11. 6.6 15			9. 6.6 15			8. 4.5 15		
5 TO 6		9. 4.7 15			10. 7.7 15			13. 7.2 15			12. 6.6 15		
6 TO 7		6. 6.9 15			6. 5.3 15			4. 4.5 15			4. 4.6 15		
7 TO 8		6. 4.9 15			4. 4.9 15			5. 6.9 15			8. 8.0 15		
8 TO 9		4. 4.5 15			4. 4.9 15			7. 7.0 15			7. 5.6 15		

None significantly different from control group

TABLE 6  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
9 TO 10		4.	4.6	15	4.	6.8	15	5.	6.4	15	6.	4.2	15
10 TO 11		3.	6.8	15	5.	3.9	15	4.	4.2	15	4.	6.4	15
11 TO 12		8.	6.2	15	7.	4.6	15	8.	3.9	15	8.	7.1	15
12 TO 13		-1.	4.7	15	-1.	4.5	15	-3.	6.2	15	-1.	6.1	15
13 TO 14		-1.	4.4	5	-1.	10.0	5	-2.	8.8	5	-10.	5.7	5

None significantly different from control group

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 6  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
BODY WEIGHT GAINS (GRAMS) - SUMMARY OF MEANS

WEEK	GROUP :	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
14 TO 15		4.			4.			6.			2.		
		5.2		5	5.2		5	3.4		5	4.6		5
15 TO 16		2.			2.			4.			2.		
		2.5		5	2.5		5	8.6		5	4.2		5
16 TO 17		6.			6.			6.			4.		
		3.4		5	3.4		5	9.7		5	7.1		5

None significantly different from control group

PBFSTv4.16  
10/27/2000  
R : 07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
0 TO 1	0	22.	2.0	15	22.	1.9	15	21.	3.0	15	21.	2.0	15
1 TO 2	1	21.	1.2	15	21.	2.3	15	21.	1.8	15	21.	1.6	15
2 TO 3	2	20.	1.8	15	20.	2.0	15	21.	2.4	15	21.	2.1	14
3 TO 4	3	22.	4.2	15	21.	3.5	15	21.	1.7	15	21.	2.3	14
		19.	1.7	14	19.	1.5	15	19.	2.5	15	19.	2.3	14

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
4 TO 5	MEAN	21.			20.			21.			21.		
	S.D.	1.5			1.7			2.3			2.4		
	N	15			15			15			14		
5 TO 6	MEAN	20.			19.			20.			20.		
	S.D.	1.7			1.6			2.5			2.3		
	N	15			15			15			14		
6 TO 7	MEAN	20.			19.			20.			20.		
	S.D.	1.6			1.6			2.1			1.8		
	N	15			15			15			14		
7 TO 8	MEAN	20.			19.			20.			19.		
	S.D.	1.7			1.6			1.9			2.0		
	N	15			15			15			14		
8 TO 9	MEAN	20.			19.			20.			19.		
	S.D.	1.1			1.3			2.0			2.5		
	N	15			15			15			14		

None significantly different from control group

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
9 TO 10		1.9. 1.5. 1.5		15	1.8. 1.8. 15		15	1.9. 1.9. 15		15	1.9. 1.9. 14		14
10 TO 11		1.9. 1.0. 1.0		15	1.8. 1.8. 15		15	2.0. 2.2. 15		15	1.9. 1.9. 14		14
11 TO 12		1.9. 1.1. 1.1		15	1.9. 1.7. 15		15	1.9. 2.1. 15		15	1.9. 2.0. 14		14
12 TO 13		1.9. 1.5. 1.5		15	1.8. 1.9. 15		15	1.9. 2.2. 15		15	1.8. 2.2. 14		14
13 TO 14		2.2. 1.1. 1.1		5	2.1. 1.9. 5		5	2.0. 1.5. 5		5	2.0. 2.7. 5		5

None significantly different from control group

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E			M A L E			M A L E			M A L E
14 TO 15	MEAN	25.		23.			23.			23.			24.
	S.D.	0.5		1.6			1.9			1.9			3.1
	N	4		5			5			5			5
15 TO 16	MEAN	22.		25.			25.			25.			25.
	S.D.	7.5		1.8			2.6			2.6			2.7
	N	5		5			5			5			5
16 TO 17	MEAN	26.		25.			25.			25.			24.
	S.D.	1.8		1.6			1.6			1.6			2.5
	N	5		5			5			5			5

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
-1 TO 0	MEAN	16.			17.			16.			16.		
	S.D.	1.2			2.5			1.2			1.7		
	N	15			15			15			15		
0 TO 1	MEAN	15.			15.			15.			16.		
	S.D.	1.4			1.8			1.7			2.1		
	N	15			15			15			15		
1 TO 2	MEAN	14.			14.			14.			16.*		
	S.D.	1.4			1.6			1.4			2.3		
	N	15			15			15			15		
2 TO 3	MEAN	15.			15.			15.			17.		
	S.D.	1.3			1.8			1.6			4.4		
	N	15			15			15			15		
3 TO 4	MEAN	14.			14.			14.			14.		
	S.D.	1.5			1.3			1.9			3.2		
	N	15			15			15			15		

\* = Significantly different from the control group at 0.05 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY					
		F E M A L E			M A L E			F E M A L E			M A L E					
		MEAN	S.D.	N		MEAN	S.D.	N		MEAN	S.D.	N		MEAN	S.D.	N
4 TO 5		15.	2.0	15		15.	1.8	15		15.	1.6	15		15.	2.4	15
5 TO 6		14.	1.7	15		14.	2.2	15		14.	1.6	15		15.	2.3	15
6 TO 7		14.	1.9	15		14.	1.9	15		14.	1.3	15		15.	1.8	15
7 TO 8		14.	1.3	15		13.	1.9	15		14.	1.5	15		15.	2.3	15
8 TO 9		14.	1.8	15		13.	1.5	15		14.	1.2	15		15.	2.1	15

None significantly different from control group

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
9 TO 10		14. 1.4 15			13. 1.6 15			14. 1.5 15			15. 1.7 15		
10 TO 11		13. 1.6 15			13. 1.6 15			13. 1.4 15			14.* 2.4 15		
11 TO 12		13. 1.7 15			14. 4.5 15			13. 1.6 15			14. 2.2 15		
12 TO 13		13. 1.5 15			13. 1.6 15			13. 1.5 15			15. 1.9 15		
13 TO 14		16. 3.6 5			14. 1.5 5			14. 2.1 5			15. 3.4 5		

\* = Significantly different from the control group at 0.05 using Dunnett's test

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 7  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
WEEKLY FOOD CONSUMPTION (GRAMS/ANIMAL/DAY) - SUMMARY OF MEANS

WEEK	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
14 TO 15		19. 3.9		5	15. 3.7		5	17. 2.8		5	16. 2.2		5
15 TO 16		18. 2.2		5	17. 1.0		5	17. 2.4		5	17. 2.1		5
16 TO 17		19. 2.5		5	17. 0.8		5	18. 1.9		5	18. 2.6		5

None significantly different from control group

PBFTv4.16  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 8 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1 PRETEST	
		HOME CAGE OBSERVATIONS	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	
GROUP:		1	2
NUMBER TESTED:		5	5
POSTURE		4	5
SITTING OR STANDING NORMALLY		0	0
ASLEEP, LYING ON SIDE OR CURLED UP		1	0
ALERT, ORIENTED TOWARD OBSERVER		0	0
CONVULSIONS - CLONIC		5	5
ABSENT		5	5
CONVULSIONS - TONIC		5	5
ABSENT		5	5
TREMORS		5	5
NONE		5	5
BITING		5	5
NONE		5	5
PALPEBRAL CLOSURE		5	5
EYELIDS WIDE OPEN		5	5
FECES CONSISTENCY		5	5
BELLETS		5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 8 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HOME CAGE OBSERVATIONS				PAGE 2 PRETEST	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:	NUMBER TESTED:	1	2	3	4		
POSTURE							
SITTING OR STANDING NORMALLY							
ALERT, ORIENTED TOWARD OBSERVER							
CONVULSIONS - CLONIC							
ABSENT		5	4	5	5	5	0
CONVULSIONS - TONIC							
ABSENT		5	5	5	5	5	5
TREMORS							
NONE		5	5	5	5	5	5
BITING							
NONE		5	5	5	5	5	5
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN							
FECES CONSISTENCY							
PELLETS		5	5	5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

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10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
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TABLE 9 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
NUMBER TESTED:		1	2	3	4	5
POSTURE						
SITTING OR STANDING NORMALLY		80.0	100.	100.	80.0	
ASLEEP, LYING ON SIDE OR CURLLED UP		0.	0.	0.	0.	
ALERT, ORIENTED TOWARD OBSERVER		20.0	0.	0.	0.	
CONVULSIONS - CLONIC	ABSENT					
	ABSENT	100.	100.	100.	100.	
CONVULSIONS - TONIC	ABSENT					
	ABSENT	100.	100.	100.	100.	
TREMORS						
NONE						
	NONE	100.	100.	100.	100.	
BITING						
NONE						
	NONE	100.	100.	100.	100.	
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN						
FECES CONSISTENCY						
PELLETS						
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

119 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 9 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HOME CAGE OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
POSTURE						
SITTING OR STANDING NORMALLY						
ALERT, ORIENTED TOWARD OBSERVER		100. 0.	80.0 20.0	100. 0.	100. 0.	100. 0.
CONVULSIONS - CLONIC						
ABSENT		100.	100.	100.	100.	100.
CONVULSIONS - TONIC						
ABSENT		100.	100.	100.	100.	100.
TREMORS						
NONE		100.	100.	100.	100.	100.
BITING						
NONE		100.	100.	100.	100.	100.
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN		100.	100.	100.	100.	100.
FECES CONSISTENCY						
PELLETS		100.	100.	100.	100.	100.
1-	0 MG/KG/DAY	2-	100 MG/KG/DAY	3-	300 MG/KG/DAY	4-
120 of 1527						

PROBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL 186012  
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TABLE 10 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1		PAGE 12	
		HOME CAGE OBSERVATIONS		MALES	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
POSTURE					
SITTING OR STANDING NORMALLY					
ASLEEP, LYING ON SIDE OR CURLED UP		4	3	3	3
ALERT, ORIENTED TOWARD OBSERVER		1	1	1	1
0					
CONVULSIONS - CLONIC					
ABSENT		5	5	5	5
CONVULSIONS - TONIC					
ABSENT		5	5	5	5
TREMORS					
NONE		5	5	5	5
BITING					
NONE		5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN					
EYELIDS COMPLETELY SHUT		4	4	4	4
1					
FECES CONSISTENCY					
PELLETS		5	5	5	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 10 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HOME CAGE OBSERVATIONS		FEMALES			
NUMBER TESTED:	NUMBER OF ANIMALS SHOWING EACH OBSERVATION	1	2	3	4
POSTURE					
SITTING OR STANDING NORMALLY					
ASLEEP, LYING ON SIDE OR CURLED UP		5	4	5	2
ALERT, ORIENTED TOWARD OBSERVER		0	0	0	1
0		0	1	0	2
CONVULSIONS - CLONIC					
ABSENT					
5	5	5	5	5	5
CONVULSIONS - TONIC					
ABSENT					
5	5	5	5	5	5
TREMORS					
NONE					
5	5	5	5	5	5
BITING					
NONE					
5	5	5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN					
EYELIDS COMPLETELY SHUT					
5	0	0	0	0	1
FECES CONSISTENCY					
PELLETS					
5	5	5	5	5	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

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10/27/2000  
R:07/18/2001

TABLE 11 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD I  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY

PAGE 1  
WEEK 12

GROUP :	NUMBER TESTED:	HOME CAGE OBSERVATIONS					4
		MALES					
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION					
		1	2	3	4	5	
POSTURE							
SITTING OR STANDING NORMALLY							
ASLEEP, LYING ON SIDE OR CURLED UP		80.0	60.0	60.0	60.0	60.0	
ALERT, ORIENTED TOWARD OBSERVER		20.0	20.0	20.0	20.0	20.0	
CONVULSIONS - CLONIC							
ABSENT		100.	100.	100.	100.	100.	
CONVULSIONS - TONIC							
ABSENT		100.	100.	100.	100.	100.	
TREMORS							
NONE		100.	100.	100.	100.	100.	
BITING							
NONE		100.	100.	100.	100.	100.	
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN		80.0	80.0	80.0	80.0	80.0	
EYELIDS COMPLETELY SHUT		20.0	20.0	20.0	20.0	20.0	
FECES CONSISTENCY							
PELLETS		100.	100.	100.	100.	100.	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

PROJECT NO.: WIL-186012  
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TABLE 11 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	HOME CAGE OBSERVATIONS	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
			FEMALES	1	2	3	4
POSTURE		SITTING OR STANDING NORMALLY		100.	80.0	100.	40.0
		ASLEEP, LYING ON SIDE OR CURLED UP		0.	0.	0.	20.0
		ALERT, ORIENTED TOWARD OBSERVER		0.	20.0	0.	40.0
CONVULSIONS - CLONIC							
ABSENT				100.	100.	100.	100.
CONVULSIONS - TONIC							
ABSENT				100.	100.	100.	100.
TREMORS							
NONE				100.	100.	100.	100.
BITING							
NONE				100.	100.	100.	100.
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN							
EYELIDS COMPLETELY SHUT				100.	100.	100.	80.0
0.				0.	0.	0.	20.0
FECES CONSISTENCY							
PELLETS				100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

124 of 1527

PFOBSIv4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
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TABLE 12 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HOME CAGE OBSERVATIONS				MALES	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:		1	2	3	4	5	5
NUMBER TESTED:		5	5	5	5	5	5
POSTURE							
SITTING OR STANDING NORMALLY		3	4	4	1	1	1
ASLEEP, LYING ON SIDE OR CURLED UP		2	1	1	0	0	3
ALERT, ORIENTED TOWARD OBSERVER		0	0	0	0	1	1
CONVULSIONS - CLONIC							
ABSENT		5	5	5	5	5	5
CONVULSIONS - TONIC							
ABSENT		5	5	5	5	5	5
TREMORS							
NONE		5	5	5	5	5	5
BITING							
NONE		5	5	5	5	5	5
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN		2	4	4	2	2	2
EYELIDS SLIGHTLY DROOPING		1	0	1	1	1	2
DROOPING EYELIDS (HALF-CLOSED)		1	1	1	0	0	1
EYELIDS COMPLETELY SHUT		1	0	0	0	0	0
FECES CONSISTENCY							
PELLETS		2	2	4	1	1	1
PELLETS, PARTIALLY FORMED		0	0	0	1	1	1
PELLETS ABSENT		3	3	1	3	3	3
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

PROJECT NO :WIL-186012  
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TABLE 12 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HOME CAGE OBSERVATIONS				PAGE 2	
		FEMALES				WEEK 16	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:	NUMBER TESTED:	1	2	3	4	5	5
POSTURE SITTING OR STANDING NORMALLY ALERT, ORIENTED TOWARD OBSERVER		2	2	3	2	3	2
CONVULSIONS - CLONIC		3	3	2	3	2	3
CONVULSIONS - TONIC		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
TREMORS		5	5	5	5	5	5
NONE		5	5	5	5	5	5
BITING		4	5	5	5	5	4
NONE		0	0	0	0	0	1
BITING OF CAGE		1	0	0	0	0	0
BITING OF SELF		0	0	0	0	0	0
PALPEBRAL CLOSURE		5	4	5	5	5	5
EYELIDS WIDE OPEN		0	1	0	0	0	0
EYELIDS SLIGHTLY DROOPING		2	2	3	3	2	1
FECES CONSISTENCY		3	3	2	4	2	4
PELLETS							
PELLETS ABSENT							
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

126 of 1527

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
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TABLE 13 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATION BATTERY SUMMARY INCIDENCE

NUMBER TESTED:	GROUP:	HOME CAGE OBSERVATIONS	MALES				
			1	2	3	4	5
POSTURE	SITTING OR STANDING NORMALLY ASLEEP, LYING ON SIDE OR CURLED UP ALERT, ORIENTED TOWARD OBSERVER		60.0 40.0 0.	80.0 20.0 0..	80.0 20.0 0.	20.0 60.0 20.0	
CONVULSIONS - CLONIC	ABSENT						
CONVULSIONS - TONIC	ABSENT		100.	100.	100.	100.	
TREMORS	NONE		100.	100.	100.	100.	
BITING	NONE		100.	100.	100.	100.	
PALPEBRAL CLOSURE	EYELIDS WIDE OPEN EYELIDS SLIGHTLY DROOPING DROOPING EYELIDS (HALF-CLOSED) EYELIDS COMPLETELY SHUT		40.0 20.0 20.0 20.0	80.0 0. 20.0 0.	80.0 20.0 0. 0.	40.0 40.0 20.0 0.	
FECES CONSISTENCY	PELLETS, PARTIALLY FORMED PELLETS ABSENT		40.0 0. 60.0	40.0 0. 60.0	80.0 0. 20.0	20.0 0. 20.0	
	1 - 0 MG/KG/DAY    2 - 100 MG/KG/DAY    3 - 300 MG/KG/DAY    4 - 1000 MG/KG/DAY						

127 of 1527

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 13 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HOME CAGE OBSERVATIONS						
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION						
		FEMALES						
GROUP:		NUMBER TESTED:						
		1	2	3	4	5	1	2
POSTURE								
SITTING OR STANDING NORMALLY		40.0	40.0	60.0	40.0	60.0	40.0	40.0
ALERT, ORIENTED TOWARD OBSERVER		60.0	60.0	60.0	40.0	60.0	60.0	60.0
CONVULSIONS - CLONIC								
ABSENT		100.	100.	100.	100.	100.	100.	100.
CONVULSIONS - TONIC								
ABSENT		100.	100.	100.	100.	100.	100.	100.
TREMORS								
NONE		100.	100.	100.	100.	100.	100.	100.
BITTING								
NONE		80.0	100.	100.	100.	100.	80.0	80.0
BITTING OF CAGE		0.	0.	0.	0.	0.	0.	0.
BITTING OF SELF		20.0	0.	0.	0.	0.	20.0	20.0
PALPEBRAL CLOSURE								
EYELIDS WIDE OPEN		100.	80.0	100.	100.	100.	100.	100.
EYELIDS SLIGHTLY DROOPING		0.	20.0	0.	0.	0.	0.	0.
FECES CONSISTENCY								
PELLETS		40.0	40.0	60.0	60.0	60.0	60.0	60.0
PELLETS ABSENT		60.0	60.0	40.0	40.0	40.0	40.0	40.0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY					

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10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-196012  
SPONSOR : CMA-BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				PAGE PRETEST 1
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
		1	2	3	4	
NUMBER TESTED:		5	5	5	5	
GROUP:						
EASE OF REMOVAL						
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP						
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		3	3	3	2	2
		2	2	2	2	3
EASE OF HANDLING IN HAND						
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE						
LACRIMATION						
NONE						
CHROMODACRYORRHEA						
ABSENT						
SALIVATION						
NONE						
PILOERECTION						
NONE						
FUR APPEARANCE						
NORMAL: CLEAN AND GROOMED						
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN						
RESPIRATORY RATE						
NORMAL: BY OBSERVATION (80-110/MIN.)						
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			
				5	5	5
					5	5

PROJECT NO : WIL-186012  
SPONSOR : CMA - BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2	
		PRETEST	
		HANDLING OBSERVATIONS	
NUMBER OF ANIMALS MALES		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	
GROUP:		1	
NUMBER TESTED:		2	
RESPIRATORY CHARACTER		3	
NORMAL		4	
RED DEPOSITS - eyes		5	
ABSENT		5	
RED DEPOSITS - nose		5	
ABSENT		5	
RED DEPOSITS - mouth		5	
ABSENT		5	
CRUSTY DEPOSITS - eyes		5	
ABSENT		5	
CRUSTY DEPOSITS - nose		5	
ABSENT		5	
CRUSTY DEPOSITS - mouth		5	
ABSENT		5	
MUCOUS MEMBRANES - color		5	
PINK		5	
EYES - color		5	
PINK		5	
1- 0 MG/KG/DAY		2- 100 MG/KG/DAY	
3- 300 MG/KG/DAY		4- 1000 MG/KG/DAY	

130 of 1527

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE PRETEST	
		3	
		HANDLING OBSERVATIONS	
NUMBER OF ANIMALS MALES		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	
GROUP :		1	2
NUMBER TESTED :		5	5
SKIN - color		5	5
PINK		5	5
EYE PROMINENCE		5	5
NORMAL		5	5
MUSCLE TONE			
MUSCLE IS FIRM BUT NOT HARD (NORMAL)			
1-	0 MG /KG/DAY	2- 100 MG /KG/DAY	3- 300 MG /KG/DAY
			4- 1000 MG /KG/DAY

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATION BATTERY SUMMARY INCIDENCE

		PAGE 4 PRETEST			
		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP :	NUMBER TESTED :	1	2	3	4
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP					
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		3	3	0	1
		2	2	5	4
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE					
LACRIMATION		5	5	5	5
NONE		5	5	5	5
CHROMODACRYORRHEA					
ABSENT		5	5	5	5
SALIVATION					
NONE		5	5	5	5
PILOERECTION					
NONE		5	5	5	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED		5	5	5	5
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN		5	5	5	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				PAGE 5 PRETEST	
		FEMALES					
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:	NUMBER TESTED:	1	2	3	4	5	5
RESPIRATORY CHARACTER							
NORMAL		5	5	5	5	5	5
RED DEPOSITS - eyes		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
RED DEPOSITS - nose		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
RED DEPOSITS - mouth		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
CRUSTY DEPOSITS - eyes		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
CRUSTY DEPOSITS - nose		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
CRUSTY DEPOSITS - mouth		5	5	5	5	5	5
ABSENT		5	5	5	5	5	5
MUCOUS MEMBRANES - color		5	5	5	5	5	5
PINK		5	5	5	5	5	5
EYES - color		5	5	5	5	5	5
PINK		5	5	5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 14 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN Rats  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

FEMALES		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
SKIN - color PINK		5	5	5	5
EYE PROMINENCE NORMAL		5	5	5	5
muscle tone muscle is firm but not hard (normal)		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 15 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	HANDLING MALES				
		1	2	3	4	5
<b>HANDLING OBSERVATIONS</b>						
EASE OF REMOVAL						
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		60.0	60.0	60.0	60.0	40.0
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		40.0	40.0	40.0	40.0	60.0
EASE OF HANDLING IN HAND						
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	100.	100.	100.	100.
LACRIMATION						
NONE		100.	100.	100.	100.	100.
CHROMODACRYORRHEA						
ABSENT		100.	100.	100.	100.	100.
SALIVATION						
NONE		100.	100.	100.	100.	100.
PILORECTRATION						
NONE		100.	100.	100.	100.	100.
FUR APPEARANCE						
NORMAL: CLEAN AND GROOMED		100.	100.	100.	100.	100.
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN		100.	100.	100.	100.	100.
RESPIRATORY RATE						
NORMAL: BY OBSERVATION (80-110/MIN.)		100.	100.	100.	100.	100.
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

PROJECT NO.:WIL-186012  
SPONSOR:CMA-BFRIP

TABLE 15 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
RESPIRATORY CHARACTER						
NORMAL		100.	100.	100.	100.	100.
RED DEPOSITS - eyes	ABSENT	100.	100.	100.	100.	100.
RED DEPOSITS - nose	ABSENT	100.	100.	100.	100.	100.
RED DEPOSITS - mouth	ABSENT	100.	100.	100.	100.	100.
CRUSTY DEPOSITS - eyes	ABSENT	100.	100.	100.	100.	100.
CRUSTY DEPOSITS - nose	ABSENT	100.	100.	100.	100.	100.
CRUSTY DEPOSITS - mouth	ABSENT	100.	100.	100.	100.	100.
MUCOUS MEMBRANES - color	PINK	100.	100.	100.	100.	100.
EYES - color	PINK	100.	100.	100.	100.	100.

1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 15 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
SKIN - color						
PINK		100.	100.	100.	100.	100.
EYE PROMINENCE						
NORMAL		100.	100.	100.	100.	100.
muscle tone						
MUSCLE IS FIRM BUT NOT HARD (NORMAL)						
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 15 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS					PAGE 4 PRETEST
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:		1	2	3	4	5	
NUMBER TESTED:		5	5	5	5	5	
EASE OF REMOVAL							
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		60.0	60.0	0.	20.0		
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		40.0	40.0	100.	80.0		
EASE OF HANDLING IN HAND							
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	100.	100.	100.		
LACRIMATION							
NONE		100.	100.	100.	100.		
CHROMODACRYORRHEA							
ABSENT		100.	100.	100.	100.		
SALIVATION							
NONE		100.	100.	100.	100.		
PILOERCTION							
NONE		100.	100.	100.	100.		
FUR APPEARANCE							
NORMAL: CLEAN AND GROOMED		100.	100.	100.	100.		
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN		100.	100.	100.	100.		
RESPIRATORY RATE							
NORMAL: BY OBSERVATION (80-110/MIN.)		100.	100.	100.	100.		
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 15 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
RESPIRATORY CHARACTER						
NORMAL		100.	100.	100.	100.	100.
RED DEPOSITS - eyes		100.	100.	100.	100.	100.
ABSENT						
RED DEPOSITS - nose		100.	100.	100.	100.	100.
ABSENT						
RED DEPOSITS - mouth		100.	100.	100.	100.	100.
ABSENT						
CRUSTY DEPOSITS - eyes		100.	100.	100.	100.	100.
ABSENT						
CRUSTY DEPOSITS - nose		100.	100.	100.	100.	100.
ABSENT						
CRUSTY DEPOSITS - mouth		100.	100.	100.	100.	100.
ABSENT						
MUCOUS MEMBRANES - color						
PINK		100.	100.	100.	100.	100.
EYES - color						
PINK		100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 15 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
		1	2	3	4	5
GROUP:						
NUMBER TESTED:						
SKIN - color	PINK	100.	100.	100.	100.	100.
EYE PROMINENCE	NORMAL	100.	100.	100.	100.	100.
muscle tone	muscle is firm but not hard (normal)					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1 WEEK 12			
		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
EASE OF REMOVAL					
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		5	5	4	5
MODERATELY DIFFICULT: ANIMAL REARS, OFTEN FOLLOWING INVESTIGATOR'S HAND		0	0	1	0
EASE OF HANDLING IN HAND					
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		5	5	5	5
LACRIMATION					
NONE		5	5	5	5
CHROMODACRYORRHEA					
ABSENT		5	5	5	5
SALIVATION					
NONE		5	5	5	5
PILOERCTION					
NONE		5	5	5	5
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED		5	5	5	4
SLIGHTLY SOILED		0	0	0	1
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN		5	5	5	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
		1	2	3	4
NUMBER TESTED:		5	5	5	5
GROUP:					
RESPIRATORY CHARACTER					
NORMAL		5	5	5	5
RED DEPOSITS - eyes		0	1	0	1
PRESENT		5	4	5	4
ABSENT					
RED DEPOSITS - nose		0	0	1	1
PRESENT		5	5	4	4
ABSENT					
RED DEPOSITS - mouth		0	0	0	1
PRESENT		5	5	5	4
ABSENT					
CRUSTY DEPOSITS - eyes					
ABSENT		5	5	5	5
CRUSTY DEPOSITS - nose					
PRESENT		5	5	5	5
ABSENT					
CRUSTY DEPOSITS - mouth					
ABSENT		5	5	5	5
MUCOUS MEMBRANES - color					
PINK		5	5	5	5

142 of 1527

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
MALES		1	2	3	4
GROUP:	NUMBER TESTED:	5	5	5	5
EYES - color	PINK	5	5	5	5
SKIN - color	PINK	5	5	5	5
EYE PROMINENCE	NORMAL	5	5	5	5
muscle tone	muscle is firm but not hard (normal)	5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATION BATTERY SUMMARY INCIDENCE

		PAGE 4 WEEK 12			
		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS FEMALEs SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
EASE OF REMOVAL		5	5	5	5
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		5	4	5	4
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0	1	0	1
EASE OF HANDLING IN HAND		5	5	5	5
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		5	5	5	5
LACRIMATION		5	5	5	5
NONE		5	5	5	5
CHROMODACRYORRHEA		5	5	5	5
ABSENT		5	5	5	5
SALIVATION		5	5	5	5
NONE		5	5	5	5
PILOERECTION		5	5	5	5
NONE		5	5	5	5
FUR APPEARANCE		5	5	5	5
NORMAL: CLEAN AND GROOMED		5	5	5	5
PALPEBRAL CLOSURE		5	5	5	5
EYELIDS WIDE OPEN		5	5	5	5
RESPIRATORY RATE		5	5	5	5
NORMAL: BY OBSERVATION (80-110/MIN.)		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

144 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS			
		FEMALES			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
RESPIRATORY CHARACTER					
NORMAL		5	5	5	5
RED DEPOSITS - eyes	ABSENT	5	5	5	5
RED DEPOSITS - nose	ABSENT	5	5	5	5
RED DEPOSITS - mouth	ABSENT	5	5	5	5
CRUSTY DEPOSITS - eyes	ABSENT	5	5	5	5
CRUSTY DEPOSITS - nose	ABSENT	5	5	5	5
CRUSTY DEPOSITS - mouth	ABSENT	5	5	5	5
MUCOUS MEMBRANES - color	PINK	5	5	5	5
EYES - color	PINK	5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

145 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 16 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

146 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
		MALES				
GROUP:	NUMBER TESTED:	1	2	3	4	5
EASE OF REMOVAL						
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		100.	100.	80.0	100.	
MODERATELY DIFFICULT: ANIMAL REARS, OFTEN FOLLOWING INVESTIGATOR'S HAND		0.	0.	20.0	0.	
EASE OF HANDLING IN HAND						
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	100.	100.	100.	
LACRIMATION						
NONE		100.	100.	100.	100.	
CHROMODACRYORRHEA						
ABSENT		100.	100.	100.	100.	
SALIVATION						
NONE		100.	100.	100.	100.	
PILOERCTION						
NONE		100.	100.	100.	100.	
FUR APPEARANCE						
NORMAL: CLEAN AND GROOMED		100.	100.	100.	80.0	
SLIGHTLY SOILED		0.	0.	0.	20.0	
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN		100.	100.	100.	100.	
RESPIRATORY RATE						
NORMAL: BY OBSERVATION (80-110/MIN.)		100.	100.	100.	100.	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
RESPIRATORY CHARACTER						
NORMAL						
RED DEPOSITS - eyes		100.	100.	100.	100.	100.
PRESENT		0.	20.0	0.	20.0	20.0
ABSENT		100.	80.0	100.	80.0	80.0
RED DEPOSITS - nose						
PRESENT		0.	0.	0.	20.0	20.0
ABSENT		100.	100.	100.	80.0	80.0
RED DEPOSITS - mouth						
PRESENT		0.	0.	0.	20.0	20.0
ABSENT		100.	100.	100.	80.0	80.0
CRUSTY DEPOSITS - eyes						
ABSENT						
CRUSTY DEPOSITS - nose						
ABSENT		100.	100.	100.	100.	100.
CRUSTY DEPOSITS - mouth						
ABSENT		100.	100.	100.	100.	100.
MUCOUS MEMBRANES - color						
PINK		100.	100.	100.	100.	100.

148 of 1527

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
		MALES	1	2	3	4
GROUP:	NUMBER TESTED:		5	5	5	5
EYES - color						
PINK			100.	100.	100.	100.
SKIN - color						
PINK			100.	100.	100.	100.
EYE PROMINENCE						
NORMAL			100.	100.	100.	100.
muscle tone						
muscle is firm but not hard (normal)			100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATION BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
EASE OF REMOVAL						
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		100.	80.0	100.	80.0	
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0.	20.0	0.	20.0	
EASE OF HANDLING IN HAND						
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	100.	100.	100.	
LACRIMATION						
NONE		100.	100.	100.	100.	
CHROMODACRYORRHEA						
ABSENT		100.	100.	100.	100.	
SALIVATION						
NONE		100.	100.	100.	100.	
PILOERCTION						
NONE		100.	100.	100.	100.	
FUR APPEARANCE						
NORMAL: CLEAN AND GROOMED		100.	100.	100.	100.	
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN		100.	100.	100.	100.	
RESPIRATORY RATE						
NORMAL: BY OBSERVATION (80-110/MIN.)		100.	100.	100.	100.	
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
RESPIRATORY CHARACTER						
NORMAL		100.	100.	100.	100.	100.
RED DEPOSITS - eyes		100.	100.	100.	100.	100.
ABSENT						
RED DEPOSITS - nose						
ABSENT		100.	100.	100.	100.	100.
RED DEPOSITS - mouth						
ABSENT		100.	100.	100.	100.	100.
CRUSTY DEPOSITS - eyes						
ABSENT		100.	100.	100.	100.	100.
CRUSTY DEPOSITS - nose						
ABSENT		100.	100.	100.	100.	100.
CRUSTY DEPOSITS - mouth						
ABSENT		100.	100.	100.	100.	100.
MUCOUS MEMBRANES - color						
PINK		100.	100.	100.	100.	100.
EYES - color						
PINK		100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 17 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS

FEMALES

PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	1	2	3	4	5
SKIN - color						
PINK		100.	100.	100.	100.	100.
EYE PROMINENCE						
NORMAL		100.	100.	100.	100.	100.
muscle tone						
muscle is firm but not hard (normal)						
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1 WEEK 16			
		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
EASE OF REMOVAL		5	5	5	5
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		5	2	5	4
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0	1	0	1
MODERATELY DIFFICULT: ANIMAL REARS, OFTEN FOLLOWING INVESTIGATOR'S HAND		0	2	0	0
EASE OF HANDLING IN HAND		5	5	5	4
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		0	0	0	1
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION		5	5	5	4
LACRIMATION		5	5	5	5
NONE		5	5	5	5
CHROMODACRYORRHEA		5	5	5	5
ABSENT		5	5	5	5
SALIVATION		5	5	5	5
NONE		5	5	5	5
PILOERECTION		5	5	5	5
NONE		5	5	5	5
FUR APPEARANCE		5	5	5	5
NORMAL: CLEAN AND GROOMED		5	5	5	5
PALPEBRAL CLOSURE		5	5	5	5
EYELIDS WIDE OPEN		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE  
WEEK 16

HANDLING OBSERVATIONS		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
		1	2	3	4
GROUP:	NUMBER TESTED:	5	5	5	5
RESPIRATORY RATE					
NORMAL: BY OBSERVATION (80-110/MIN.)		5	5	5	5
RESPIRATORY CHARACTER					
NORMAL		5	5	5	5
RED DEPOSITS - eyes					
ABSENT		5	5	5	5
RED DEPOSITS - nose					
ABSENT		5	5	5	5
RED DEPOSITS - mouth					
ABSENT		5	5	5	5
CRUSTY DEPOSITS - eyes					
ABSENT		5	5	5	5
CRUSTY DEPOSITS - nose					
ABSENT		5	5	5	5
CRUSTY DEPOSITS - mouth					
ABSENT		5	5	5	5
MUCOUS MEMBRANES - color					
PINK		5	5	5	5

154 of 1527

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO : WTL-186012  
SPONSOR : CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		MALES				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	
NUMBER TESTED:		5	5	5	5	
EYES - color	PINK	5	5	5	5	5
SKIN - color	PINK	5	5	5	5	5
EYE PROMINENCE	NORMAL	5	5	5	5	5
muscle tone	muscle is firm but not hard (normal)	5	5	5	5	5
1 - 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 4 WEEK 16			
		PAGE 4 WEEK 16			
		HANDLING OBSERVATIONS			
		FEMALES			
NUMBER TESTED:		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
EASE OF REMOVAL		5	5	5	5
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		4	3	4	5
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0	2	1	0
DIFFICULT: RUNS AROUND CAGE, IS HARD TO GRAB, WITH/WITHOUT VOCALIZATION		1	0	0	0
EASE OF HANDLING IN HAND		5	4	5	5
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		0	1	0	0
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION					
LACRIMATION		5	4	5	5
NONE		0	1	0	0
SLIGHT					
CHROMODACRYORRHEA		5	5	5	5
ABSENT					
SALIVATION		5	5	5	5
NONE					
PILOERECTION		5	5	5	5
NONE					
FUR APPEARANCE					
NORMAL: CLEAN AND GROOMED					
PALPEBRAL CLOSURE					
EYELIDS WIDE OPEN		5	5	5	5
1 - 0 MG/KG/DAY		2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
		FEMALES			
GROUP:	NUMBER TESTED:	1	2	3	4
RESPIRATORY RATE		5	5	5	5
NORMAL: BY OBSERVATION (80-110/MIN.)		5	5	5	5
RESPIRATORY CHARACTER		5	5	5	5
NORMAL		1	1	0	0
RED DEPOSITS - eyes		4	4	5	5
PRESENT		5	5	5	5
ABSENT		5	5	5	5
RED DEPOSITS - nose		5	5	5	5
ABSENT		5	5	5	5
RED DEPOSITS - mouth		5	5	5	5
ABSENT		5	5	5	5
CRUSTY DEPOSITS - eyes		5	5	5	5
ABSENT		5	5	5	5
CRUSTY DEPOSITS - nose		5	5	5	5
ABSENT		5	5	5	5
CRUSTY DEPOSITS - mouth		5	5	5	5
ABSENT		5	5	5	5
MUCOUS MEMBRANES - color		5	5	5	5
PINK		5	5	5	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 18 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING OBSERVATIONS

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	1	2	3	4	5
EYES - color						
PINK		5	5	5	5	5
SKIN - color						
PINK		5	5	5	5	5
EYE PROMINENCE						
NORMAL		5	4	4	4	5
EXOPHTHALMUS		0	1	1	0	0
muscle tone						
muscle is firm but not hard (normal)						
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			
				5	5	5

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PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 1.9 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION	HANDLING MALES				
			1	2	3	4	5
EASE OF REMOVAL							
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		100.	40.0	100.	80.0	20.0	0.
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0.	20.0	0.	0.	0.	0.
MODERATELY DIFFICULT: ANIMAL REARS, OFTEN FOLLOWING INVESTIGATOR'S HAND		0.	40.0	0.	0.	0.	0.
EASE OF HANDLING IN HAND							
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	100.	100.	80.0	20.0	0.
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION		0.	0.	0.	0.	0.	0.
LACRIMATION							
NONE		100.	100.	100.	100.	100.	100.
CHROMODACRYORRHEA							
ABSENT		100.	100.	100.	100.	100.	100.
SALIVATION							
NONE		100.	100.	100.	100.	100.	100.
PILOERECTION							
NONE		100.	100.	100.	100.	100.	100.
FUR APPEARANCE							
NORMAL: CLEAN AND GROOMED		100.	100.	100.	100.	100.	100.
PALPEBRAL CLOSURE							
EYELIDS WIDE OPEN		100.	100.	100.	100.	100.	100.
1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY							

159 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 19 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	HANDLING MALES	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
			1	2	3	4	5
RESPIRATORY RATE							
NORMAL: BY OBSERVATION (80-110/MIN.)			100.	100.	100.	100.	100.
RESPIRATORY CHARACTER							
NORMAL			100.	100.	100.	100.	100.
RED DEPOSITS - eyes							
ABSENT			100.	100.	100.	100.	100.
RED DEPOSITS - nose							
ABSENT			100.	100.	100.	100.	100.
RED DEPOSITS - mouth							
ABSENT			100.	100.	100.	100.	100.
CRUSTY DEPOSITS - eyes							
ABSENT			100.	100.	100.	100.	100.
CRUSTY DEPOSITS - nose							
ABSENT			100.	100.	100.	100.	100.
CRUSTY DEPOSITS - mouth							
ABSENT			100.	100.	100.	100.	100.
MUCOUS MEMBRANES - color							
PINK			100.	100.	100.	100.	100.
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 19 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

HANDLING MALES		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
EYES - color						
PINK		100.	100.	100.	100.	100.
SKIN - color						
PINK		100.	100.	100.	100.	100.
EYE PROMINENCE						
NORMAL		100.	100.	100.	100.	100.
muscle tone						
muscle is firm but not hard (normal)		100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

TABLE 19 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
EASE OF REMOVAL						
VERY EASY: ANIMAL SITS QUIETLY, ALLOWS INVESTIGATOR TO PICK IT UP		80.0	60.0	80.0	100.	
EASY: WITH/WITHOUT VOCALIZATION, WITHOUT RESISTANCE OR SLIGHT RESISTANCE		0.	40.0	20.0	0.	
DIFFICULT: RUNS AROUND CAGE, IS HARD TO GRAB, WITH/WITHOUT VOCALIZATION		20.0	0.	0.	0.	
EASE OF HANDLING IN HAND						
LOW: NO RESISTANCE, ANIMAL IS EASY TO HANDLE		100.	80.0	100.	100.	
MODERATELY LOW: SLIGHT RESISTANCE TO BEING HANDLED, WITH/WITHOUT VOCALIZATION		0.	20.0	0.	0.	
LACRIMATION						
NONE		100.	80.0	100.	100.	
SLIGHT		0.	20.0	0.	0.	
CHROMODACRYORRHEA						
ABSENT		100.	100.	100.	100.	
SALIVATION						
NONE		100.	100.	100.	100.	
PILOERECTION						
NONE		100.	100.	100.	100.	
FUR APPEARANCE						
NORMAL: CLEAN AND GROOMED		100.	100.	100.	100.	
PALPEBRAL CLOSURE						
EYELIDS WIDE OPEN		100.	100.	100.	100.	
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 19 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	HANDLING OBSERVATIONS				
		FEMALES	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION	1	2	3
				5	5	5
RESPIRATORY RATE			NORMAL: BY OBSERVATION (80-110/MIN.)	100.	100.	100.
RESPIRATORY CHARACTER			NORMAL	100.	100.	100.
RED DEPOSITS - eyes			PRESENT	20.0	20.0	0.
			ABSENT	80.0	80.0	100.
RED DEPOSITS - nose .			ABSENT	100.	100.	100.
RED DEPOSITS - mouth			ABSENT	100.	100.	100.
CRUSTY DEPOSITS - eyes			ABSENT	100.	100.	100.
CRUSTY DEPOSITS - nose			ABSENT	100.	100.	100.
CRUSTY DEPOSITS - mouth			ABSENT	100.	100.	100.
MUCOUS MEMBRANES - color			PINK	100.	100.	100.
			1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

163 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 19 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		HANDLING OBSERVATIONS				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
		FEMALES				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	4	5
EYES - color	PINK	100.	100.	100.	100.	100.
SKIN - color	PINK	100.	100.	100.	100.	100.
EYE PROMINENCE	NORMAL	100.	80.0	80.0	100.	0.
	EXOPHTHALMUS	0.	20.0	20.0	0.	0.
muscle tone	muscle is firm but not hard (normal)	100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

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PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 20 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS		MALES		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	
GROUP:	NUMBER TESTED:	MEAN	S.D.	1	2
MOBILITY				5	5
NORMAL		0.4	0.3	5	5
GAIT		0.13	0.08	5	5
NORMAL		5	5	5	5
CONVULSIONS - CLONIC				5	5
ABSENT				5	5
CONVULSIONS - TONIC				5	5
ABSENT				5	5
TREMBORS				5	5
NONE				5	5
GAIT SCORE				5	5
NORMAL				5	5
AROUSAL				5	5
NORMAL: ALERT, EXPLORATORY MOVEMENTS				5	5
BIZARRE/STEREOTYPIC BEHAVIOR				5	5
NONE				5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 20 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	MALES				
		1	2	3	4	5
REARING	: MEAN S.D.	5.6 4.56	9.8 6.38	10.0 4.36	6.4 3.65	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.2 0.45	0.2 0.45	0.0 0.00	0.0 0.00	0.4 0.55
URINATION	: MEAN S.D.	0.4 0.55	0.2 0.45	0.8 0.45	0.6 0.45	0.6 0.55
DEFECATION	: MEAN S.D.	0.6 0.89	1.0 1.73	1.2 1.79	1.0 1.73	1.73

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 20 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
TIME TO FIRST STEP (seconds)	: MEAN S.D.	0.3 0.00	0.3 0.04	0.3 0.07	0.3 0.08
MOBILITY					
NORMAL		5	5	5	5
GAIT					
NORMAL		5	5	5	5
CONVULSIONS - CLONIC					
ABSENT		5	5	5	5
CONVULSIONS - TONIC					
ABSENT		5	5	5	5
TREMORS					
NONE		5	5	5	5
GAIT SCORE					
NORMAL		5	5	5	5
AROUSAL					
NORMAL: ALERT, EXPLORATORY MOVEMENTS		5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR					
NONE		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 20 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
REARING	: MEAN	7.4	8.8	9.0	9.0	9.0
	S.D.	4.04	5.22	3.46	7.78	
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	0.8	0.2	0.6	0.2	0.2
	S.D.	0.45	0.45	0.89	0.45	
URINATION	: MEAN	0.2	0.8	0.2	0.2	0.2
	S.D.	0.45	0.84	0.45	0.45	
DEFECATION	: MEAN	0.0	1.8	0.0	0.0	0.0
	S.D.	0.00	2.95	0.00	0.00	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

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11/20/2000  
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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 2.1 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	TIME TO FIRST STEP (seconds)	: MEAN S.D.	1	2	3	4	5
MOBILITY				0.4 0.13	0.3 0.08	0.3 0.09	0.3 0.09	0.3 0.04
NORMAL				100.	100.	100.	100.	100.
GAIT				100.	100.	100.	100.	100.
NORMAL				100.	100.	100.	100.	100.
CONVULSIONS - CLONIC				100.	100.	100.	100.	100.
ABSENT				100.	100.	100.	100.	100.
CONVULSIONS - TONIC				100.	100.	100.	100.	100.
ABSENT				100.	100.	100.	100.	100.
TREMORS				100.	100.	100.	100.	100.
NONE				100.	100.	100.	100.	100.
GAIT SCORE				100.	100.	100.	100.	100.
NORMAL				100.	100.	100.	100.	100.
AROUSAL				100.	100.	100.	100.	100.
NORMAL: ALERT, EXPLORATORY MOVEMENTS				100.	100.	100.	100.	100.
BIZARRE/STEREOTYPIC BEHAVIOR				100.	100.	100.	100.	100.
NONE				100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY					

169 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 21 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	1	2	3	4	5
REARING	: MEAN S.D.	5.6 4.56	9.8 6.38	10.0 4.36	6.4 3.65	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.2 0.45	0.2 0.45	0.0 0.00	0.0 0.00	0.4 0.55
URINATION	: MEAN S.D.	0.4 0.55	0.2 0.45	0.8 0.45	0.6 0.45	0.6 0.55
DEFECATION	: MEAN S.D.	0.6 0.89	1.0 1.73	1.2 1.79	1.0 1.73	

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 21 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION			
		1	2	3	4
GROUP:	NUMBER TESTED:	5	5	5	5
	TIME TO FIRST STEP (seconds)	: MEAN S.D.	0.3 0.00	0.3 0.04	0.3 0.07
MOBILITY	NORMAL	100.	100.	100.	100.
GAIT	NORMAL	100.	100.	100.	100.
CONVULSIONS - CLONIC	ABSENT	100.	100.	100.	100.
CONVULSIONS - TONIC	ABSENT	100.	100.	100.	100.
TREMORS	NONE	100.	100.	100.	100.
GAIT SCORE	NORMAL	100.	100.	100.	100.
AROUSAL	NORMAL: ALERT, EXPLORATORY MOVEMENTS	100.	100.	100.	100.
BIZARRE/STEREOTYPIC BEHAVIOR	NONE	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO. :WIL-186012  
SPONSOR :CWA-BFRIP

TABLE 2.1 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

FEMALES  
PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	1	2	3	4	5
REARING	: MEAN S.D.	7.4 4.04	8.8 5.22	9.0 3.46	9.0 7.78	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.8 0.45	0.2 0.45	0.6 0.89	0.2 0.45	0.2 0.45
URINATION	: MEAN S.D.	0.2 0.45	0.8 0.84	0.2 0.45	0.2 0.45	0.2 0.45
DEFECATION	: MEAN S.D.	0.0 0.00	1.8 2.95	0.0 0.00	0.0 0.00	0.0 0.00
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

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10/27/2000  
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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 22 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS			
		MALES			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
TIME TO FIRST STEP (seconds)	: MEAN S.D.	0.4 0.08	0.5 0.11	0.3 0.12	0.3 0.11
MOBILITY		5	5	5	5
NORMAL		5	5	5	5
GAIT		5	5	5	5
NORMAL		5	5	5	5
CONVULSIONS - CLONIC		5	5	5	5
ABSENT		5	5	5	5
CONVULSIONS - TONIC		5	5	5	5
ABSENT		5	5	5	5
TREMORS		5	5	5	5
NONE		5	5	5	5
GAIT SCORE		5	5	5	5
NORMAL		5	5	5	5
AROUSAL	NORMAL: ALERT, EXPLORATORY MOVEMENTS	5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR		5	5	5	5
NONE		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 22 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP: NUMBER TESTED:	MALES				
	1	2	3	4	5
REARING	: MEAN S.D.	4.2 2.17	5.8 3.35	6.8 1.64	4.0 1.87
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.2 0.45	0.0 0.00	0.0 0.00	0.0 0.00
URINATION	: MEAN S.D.	0.2 0.45	0.8 0.84	1.2 1.30	0.8 0.84
DEFECATION	: MEAN S.D.	0.2 0.45	0.4 0.55	0.0 0.00	0.4 0.55

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 22 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

FEMALES  
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP:	NUMBER TESTED:	TIME TO FIRST STEP (seconds)	: MEAN S.D.	1	2	3	4
MOBILITY NORMAL			0.3 0.04	5	5	5	5
GAIT NORMAL				5	5	5	5
CONVULSIONS - CLONIC ABSENT				5	5	5	5
CONVULSIONS - TONIC ABSENT				5	5	5	5
TREMORS NONE				5	5	5	5
GAIT SCORE NORMAL				5	5	5	5
AROUSAL NORMAL: ALERT, EXPLORATORY MOVEMENTS NONE				5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR NONE				5	5	5	5
				1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 22 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

FEMALES  
NUMBER OF ANIMALS SHOWING EACH OBSERVATION

GROUP :	NUMBER TESTED :	1	2	3	4	5
REARING	: MEAN S.D.	11.8 3.83	9.0 5.29	10.6 7.44	10.6 6.47	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.6 0.89	0.2 0.45	0.0 0.00	0.0 0.00	0.4 0.55
URINATION	: MEAN S.D.	0.2 0.45	0.2 0.45	0.2 0.45	0.2 0.45	0.0 0.00
DEFECATION	: MEAN S.D.	0.0 0.00	0.2 0.45	0.0 0.00	0.0 0.00	0.0 0.00

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 23 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS		MALES			
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
		5	5	5	5
		0.4	0.5	0.3	0.3
		0.08	0.11	0.12	0.11
MOBILITY					
NORMAL		100.	100.	100.	100.
GAIT					
NORMAL		100.	100.	100.	100.
CONVULSIONS - CLONIC					
ABSENT		100.	100.	100.	100.
CONVULSIONS - TONIC					
ABSENT		100.	100.	100.	100.
TREMORS					
NONE		100.	100.	100.	100.
GAIT SCORE					
NORMAL		100.	100.	100.	100.
AROUSAL					
NORMAL: ALERT, EXPLORATORY MOVEMENTS		100.	100.	100.	100.
BIZARRE/STEREOTYPIC BEHAVIOR					
NONE		100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO. :WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 23 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS			
		MALES			
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION			
GROUP :	NUMBER TESTED :	1	2	3	4
		5	5	5	5
REARING	: MEAN S.D.	4.2 2.17	5.8 3.35	6.8 1.64	4.0 1.87
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.2 0.45	0.0 0.00	0.0 0.00	0.0 0.00
URINATION	: MEAN S.D.	0.2 0.45	0.8 0.84	1.2 1.30	0.8 0.84
DEFECATION	: MEAN S.D.	0.2 0.45	0.4 0.55	0.0 0.00	0.4 0.55

1 - 0 MG/KG/DAY

2 - 100 MG/KG/DAY

3 - 300 MG/KG/DAY

4 - 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 23 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 3		PAGE 3	
		WEEK 12		WEEK 12	
OPEN FIELD OBSERVATIONS		FEMALES			
PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:	NUMBER TESTED:	1	2	3	4
TIME TO FIRST STEP (seconds)	: MEAN S.D.	5 0.04	5 0.05	5 0.05	5 0.04
MOBILITY NORMAL		100.	100.	100.	100.
GAIT NORMAL		100.	100.	100.	100.
CONVULSIONS - CLONIC ABSENT		100.	100.	100.	100.
CONVULSIONS - TONIC ABSENT		100.	100.	100.	100.
TREMORS NONE		100.	100.	100.	100.
GAIT SCORE NORMAL		100.	100.	100.	100.
AROUSAL NORMAL: ALERT, EXPLORATORY MOVEMENTS		100.	100.	100.	100.
BIZARRE/STEREOTYPIC BEHAVIOR NONE		100.	100.	100.	100.

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO. : MIL-186012  
SPONSOR : CMA-BFRIP

TABLE 23 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP :		1	2	3	4	5
NUMBER TESTED :		5	5	5	5	5
REARING	: MEAN S.D.	11.8 3.83	9.0 5.29	10.6 7.44	10.6 7.44	10.6 6.47
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.6 0.89	0.2 0.45	0.0 0.00	0.4 0.45	0.0 0.00
URINATION	: MEAN S.D.	0.2 0.45	0.2 0.45	0.2 0.45	0.2 0.45	0.0 0.00
DEFECATION	: MEAN S.D.	0.0 0.00	0.2 0.45	0.0 0.00	0.0 0.00	0.0 0.00

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 24 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1		WEEK 16	
		OPEN FIELD OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
TIME TO FIRST STEP (seconds)	: MEAN S.D.	0.3 0.08	0.3 0.05	0.4 0.11	0.3 0.12
MOBILITY		4	5	5	5
NORMAL		1	0	0	0
SLIGHTLY IMPAIRED					
GALT		4	5	5	5
NORMAL		1	0	0	0
HUNCHED BODY					
CONVULSIONS - CLONIC		5	5	5	5
ABSENT					
CONVULSIONS - TONIC		5	5	5	5
ABSENT					
TREMORS		5	5	5	5
NONE					
GALT SCORE		4	5	5	5
NORMAL		1	0	0	0
SLIGHT IMPAIRMENT, BUT DEFINITE					
AROUSAL		1	0	0	0
LOW: SOMEWHAT STUPOROUS		4	5	5	5
NORMAL: ALERT, EXPLORATORY MOVEMENTS					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 24 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
BIZARRE/STEREOTYPIC BEHAVIOR						
NONE	: MEAN	5	5	5	5	5
REARING	: S.D.	3.2	6.4	6.8	4.8	5
		2.86	3.65	1.92	3.96	
BACKING	: MEAN	0.0	0.0	0.0	0.0	0.0
	: S.D.	0.00	0.00	0.00	0.00	0.00
GROOMING	: MEAN	0.0	0.2	0.0	0.2	0.2
	: S.D.	0.00	0.45	0.00	0.45	
URINATION	: MEAN	0.6	0.4	0.8	1.0	
	: S.D.	0.89	0.55	0.84	0.71	
DEFECATION	: MEAN	1.0	0.8	0.0	0.2	
	: S.D.	1.00	1.30	0.00	0.45	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 24 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS

FEMALES		MALES	
NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	MEAN	S.D.
TIME TO FIRST STEP (seconds)			
MOBILITY			
NORMAL		0.05	0.04
GAIT			
NORMAL		0.3	0.3
CONVULSIONS - CLONIC			
ABSENT		5	5
CONVULSIONS - TONIC			
ABSENT		5	5
TREMORS			
NONE		5	5
GAIT SCORE			
NORMAL		5	5
AROUSAL			
NORMAL: ALERT, EXPLORATORY MOVEMENTS			
BIZARRE/STEREOTYPIC BEHAVIOR			
NONE		5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 24 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		OPEN FIELD OBSERVATIONS				
		FEMALES				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
REARING	: MEAN S.D.	14.2 6.87	11.0 6.89	10.6 5.08	11.4 7.30	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.4 0.55	0.6 0.55	0.4 0.89	0.2 0.45	
URINATION	: MEAN S.D.	0.0 0.00	0.2 0.45	0.0 0.00	0.2 0.45	
DEFECATION	: MEAN S.D.	0.0 0.00	0.6 1.34	0.0 0.00	0.0 0.00	0.0 0.00

- 1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY

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PROJECT NO.: WIL-186012  
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TABLE 25 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 1  
WEEK 16

OPEN FIELD OBSERVATIONS		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:	NUMBER TESTED:	1	2	3	4
TIME TO FIRST STEP (seconds)	: MEAN S.D.	5 0.3 0.08	5 0.3 0.05	5 0.4 0.11	5 0.3 0.12
MOBILITY					
NORMAL		80.0 20.0	100. 0.	100. 0.	100. 0.
SLIGHTLY IMPAIRED					
GAIT					
NORMAL	HUNCHED BODY	80.0 20.0	100. 0.	100. 0.	100. 0.
CONVULSIONS - CLONIC					
ABSENT		100.	100.	100.	100.
CONVULSIONS - TONIC					
ABSENT		100.	100.	100.	100.
TREMORS					
NONE		100.	100.	100.	100.
GAIT SCORE					
NORMAL		80.0 20.0	100. 0.	100. 0.	100. 0.
SLIGHT IMPAIRMENT, BUT DEFINITE					
AROUSAL					
LOW: SOMEWHAT STUPOROUS		20.0 80.0	0. 100.	0. 100.	0. 100.
NORMAL: ALERT, EXPLORATORY MOVEMENTS					
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 25 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2 WEEK 16				
		OPEN FIELD OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
BIZARRE/STEREOTYPIC BEHAVIOR		100.	100.	100.	100.	100.
NONE		3.2	6.4	6.8	4.8	
REARING	: MEAN S.D.	2.86	3.65	1.92	3.96	
BACKING	: MEAN S.D.	0.0	0.0	0.0	0.0	
GROOMING	: MEAN S.D.	0.0	0.2	0.0	0.2	
URINATION	: MEAN S.D.	0.6	0.4	0.8	1.0	
DEFECATION	: MEAN S.D.	0.89	0.55	0.84	0.71	
		1.0	0.8	0.0	0.2	
		1.00	1.30	0.00	0.45	
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 25 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 3  
WEEK 16

OPEN FIELD OBSERVATIONS		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	TIME TO FIRST STEP (seconds)	: MEAN S.D.	1	2	3
MOBILITY NORMAL			0.3 0.05	5	5	4
GAIT NORMAL			0.3 0.04	5	5	5
CONVULSIONS - CLONIC ABSENT			100. 100.	100.	100.	100.
CONVULSIONS - TONIC ABSENT			100. 100.	100.	100.	100.
TREMORS NONE			100. 100.	100.	100.	100.
GAIT SCORE NORMAL			100. 100.	100.	100.	100.
AROUSAL NORMAL: ALERT, EXPLORATORY MOVEMENTS			100. 100.	100.	100.	100.
BIZARRE/STEREOTYPIC BEHAVIOR NONE			100. 100.	100.	100.	100.

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 25 (WEEK 16 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

OPEN FIELD OBSERVATIONS		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
FEMALES		1	2	3	4	5
GROUP:	NUMBER TESTED:	5	5	5	5	5
REARING	: MEAN S.D.	14.2 6.87	11.0 6.89	10.6 5.08	11.4 7.30	
BACKING	: MEAN S.D.	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00
GROOMING	: MEAN S.D.	0.4 0.55	0.6 0.55	0.4 0.89	0.2 0.45	0.0 0.00
URINATION	: MEAN S.D.	0.0 0.00	0.2 0.45	0.0 0.00	0.2 0.45	0.0 0.00
DEFECATION	: MEAN S.D.	0.0 0.00	0.6 1.34	0.0 0.00	0.0 0.00	0.0 0.00

1 - 0 MG/KG/DAY    2 - 100 MG/KG/DAY    3 - 300 MG/KG/DAY    4 - 1000 MG/KG/DAY

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TABLE 26 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
APPROACH RESPONSE	SLOW APPROACH, SNIFFING OR TURNING AWAY	5	5	5	5
TOUCH RESPONSE	ANIMAL MAY SLOWLY TURN, WALK AWAY	5	5	5	5
STARTLE RESPONSE	SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD	5	5	5	5
TAIL PINCH RESPONSE	ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	5	4	5	5
OLFACTORY ORIENTATION	REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	5	5	5	5
PUPIL RESPONSE	PUPIL RESPONSE PRESENT	5	5	5	5
EYEBLINK RESPONSE	EYEBLINK RESPONSE PRESENT	5	5	5	5
FORELIMB EXTENSION	FORELIMB EXTENSION PRESENT	5	5	5	5
HINDLIMB EXTENSION	HINDLIMB EXTENSION PRESENT	5	5	5	5
	1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY				
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX					

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 26 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2	
		PRETEST	
		SENSORY OBSERVATIONS	
		MALES	
NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2
NUMBER TESTED:		5	5
AIR RIGHTING REFLEX			
NORMAL		5	4
SLIGHTLY UNCOORDINATED		0	1
1- 0 MG/KG/DAY		3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY
2- 100 MG/KG/DAY			
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX			

TABLE 26 (WEEK -1 PRETEST EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS			
		NUMBER OF ANIMALS FEMALEs SHOWING EACH OBSERVATION			
NUMBER TESTED:		1	2	3	4
APPROACH RESPONSE					
SLOW APPROACH, SNIFFING OR TURNING AWAY		5	5	5	5
TOUCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	5	5	5
STARTLE RESPONSE					
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		5	5	4	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		0	0	1	0
TAIL PINCH RESPONSE					
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	5	4	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		0	0	1	0
OLFACTORY ORIENTATION					
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		5	5	5	5
PUPIL RESPONSE					
PUPIL RESPONSE PRESENT		5	5	5	5
EYEBLINK RESPONSE					
EYEBLINK RESPONSE PRESENT		5	5	5	5
FORELIMB EXTENSION					
NO FORELIMB EXTENSION PRESENT		1	0	0	0
FORELIMB EXTENSION PRESENT		4	5	5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
 COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 26 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
		1	2	3	4
GROUP:					
NUMBER TESTED:					
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT		5	5	5	5
AIR RIGHTING REFLEX					
NORMAL		4	5	5	5
SLIGHTLY UNCOORDINATED		1	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX					

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 27 (WEEK-1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS					PAGE 1 PRETEST
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION					
NUMBER TESTED:		1	2	3	4	5	
GROUP :							
APPROACH RESPONSE							
SLOW APPROACH, SNIFFING OR TURNING AWAY		100.	100.	100.	100.	100.	
TOUCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY		100.	100.	100.	100.	100.	
STARTLE RESPONSE							
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		100.	100.	100.	100.	100.	
TAIL PINCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 20.0	100. 0.	100. 0.	100. 0.	
OLFACATORY ORIENTATION							
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		100.	100.	100.	100.	100.	
PUPIL RESPONSE							
PUPIL RESPONSE PRESENT		100.	100.	100.	100.	100.	
EYEBLINK RESPONSE							
EYEBLINK RESPONSE PRESENT		100.	100.	100.	100.	100.	
FORELIMB EXTENSION							
FORELIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	
HINDLIMB EXTENSION							
HINDLIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY				
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX							

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 27 (WEEK-1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	
NUMBER TESTED:		5	5	5	5	
AIR RIGHTING REFLEX						
NORMAL		100.	80.0	100.	100.	
SLIGHTLY UNCOORDINATED		0.	20.0	0.	0.	
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 27 (WEEK-1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

NUMBER TESTED:	GROUP:	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION	SENSORY OBSERVATIONS				
			FEMALES	1	2	3	4
	APPROACH RESPONSE SLOW APPROACH, SNIFFING OR TURNING AWAY	100.	100.	100.	100.	100.	100.
	TOUCH RESPONSE ANIMAL MAY SLOWLY TURN, WALK AWAY	100.	100.	100.	100.	100.	100.
	STARTLE RESPONSE SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	100. 0.	100. 0.	100. 0.	80.0 20.0	80.0 0.	100. 0.
	TAIL PINCH RESPONSE ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION	100. 0.	100. 0.	100. 0.	80.0 20.0	80.0 0.	100. 0.
	OLFACTORY ORIENTATION REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE	100.	100.	100.	100.	100.	100.
	PUPIL RESPONSE PUPIL RESPONSE PRESENT	100.	100.	100.	100.	100.	100.
	EYEBLINK RESPONSE EYEBLINK RESPONSE PRESENT	100.	100.	100.	100.	100.	100.
	FORELIMB EXTENSION NO FORELIMB EXTENSION FORELIMB EXTENSION PRESENT	20.0 80.0	0. 100.	0. 100.	0. 100.	0. 100.	0. 100.

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 27 (WEEK-1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSION						
HINDLIMB EXTENSION	PRESENT	100.	100.	100.	100.	100.
AIR RIGHTING REFLEX						
NORMAL		80.0	100.	100.	100.	100.
SLIGHTLY UNCOORDINATED		20.0	0.	0.	0.	0.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX						

PFOBSUV4.1.1  
10/27/2000  
R:07/18/2001

TABLE 28 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBbcd IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP :	NUMBER TESTED :	SENSORY OBSERVATIONS		NUMBER OF ANIMALS SHOWING EACH OBSERVATION
		MALES	FEMALES	
APPROACH RESPONSE				
NO REACTION		5	5	5
SLOW APPROACH, SNIFFING OR TURNING AWAY		0	1	0
MORE ENERGETIC RESPONSE THAN (2) , WITH/WITHOUT VOCALIZATION		5	4	5
TOUCH RESPONSE				
NO REACTION		0	1	0
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	4	5
MORE ENERGETIC RESPONSE THAN (2) , WITH/WITHOUT VOCALIZATION		0	0	0
STARTLE RESPONSE				
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		5	5	5
TAIL PINCH RESPONSE				
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	5	5
MORE ENERGETIC RESPONSE THAN (2) , WITH/WITHOUT VOCALIZATION		0	0	0
OLFACTORY ORIENTATION				
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		5	5	5
PUPIL RESPONSE				
PUPIL RESPONSE PRESENT		5	5	5
EYEBLINK RESPONSE				
EYEBLINK RESPONSE PRESENT		5	5	5
FORELIMB EXTENSION				
FORELIMB EXTENSION PRESENT		5	5	5
1- 0 MG / KG / DAY	2- 100 MG / KG / DAY	3- 300 MG / KG / DAY	AN APPENDIX	4- 1000 MG / KG / DAY
COMPLETE SCORING				

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 28 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2 WEEK 12	
		SENSORY OBSERVATIONS	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	
GROUP :	NUMBER TESTED:	1	2
HINDLIMB EXTENSION		5	5
HINDLIMB EXTENSION PRESENT		5	5
AIR RIGHTING REFLEX		5	5
NORMAL		5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 28 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 3  
WEEK 12

		SENSORY OBSERVATIONS			
		FEMALES			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP :	NUMBER TESTED:	1	2	3	4
APPROACH RESPONSE		5	5	5	5
SLOW APPROACH, SNIFFING OR TURNING AWAY		5	5	5	5
TOUCH RESPONSE		5	5	5	5
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	5	5	5
STARTLE RESPONSE		0	0	0	1
NO REACTION		5	5	5	4
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		5	5	5	5
TAIL PINCH RESPONSE		5	5	5	5
ANIMAL MAY SLOWLY TURN, WALK AWAY		5	5	5	5
OLFACTORY ORIENTATION		5	5	5	5
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		5	5	5	5
PUPIL RESPONSE		5	5	5	5
PUPIL RESPONSE PRESENT		5	5	5	5
EYEBLINK RESPONSE		5	5	5	5
EYEBLINK RESPONSE PRESENT		5	5	5	5
FORELIMB EXTENSION		5	5	5	5
FORELIMB EXTENSION PRESENT		5	5	5	5
HINDLIMB EXTENSION		5	5	5	5
HINDLIMB EXTENSION PRESENT		5	5	5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 28 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS			
		FEMALES			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
AIR RIGHTING REFLEX					
NORMAL		5	5	5	5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX					

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10/27/2000  
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TABLE 29 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION	SENSORY OBSERVATIONS				
			MALES	1	2	3	4
APPROACH RESPONSE							
NO REACTION		0.		20.0	0.	0.	
SLOW APPROACH, SNIFFING OR TURNING AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 0.	80.0 20.0	0.	100. 0.	
TOUCH RESPONSE							
NO REACTION		0.		20.0	0.	0.	
ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 0.	80.0 20.0	0.	100. 0.	
STARLKE RESPONSE, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD							
TAIL PINCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	100. 0.	80.0 20.0	0.	100. 0.	
OLFACTORY ORIENTATION							
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		100.	100.	100.	100.	100.	
PUPIL RESPONSE							
PUPIL RESPONSE PRESENT		100.	100.	100.	100.	100.	
EYEBLINK RESPONSE							
EYEBLINK RESPONSE PRESENT		100.	100.	100.	100.	100.	
FORELIMB EXTENSION							
FORELIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 29 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

NUMBER TESTED:	GROUP:	SENSORY OBSERVATIONS				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
		1	2	3	4	5
HINDLIMB EXTENSION						
HINDLIMB EXTENSION	PRESENT	100.	100.	100.	100.	100.
AIR RIGHTING REFLEX						
NORMAL		100.	100.	100.	100.	100.
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX						

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 29 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	SENSORY OBSERVATIONS	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
			1	2	3	4	5
APPROACH RESPONSE							
SLOW APPROACH, SNIFFING OR TURNING AWAY			100.	100.	100.	100.	100.
TOUCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY			100.	100.	100.	100.	100.
STARTLE RESPONSE							
NO REACTION							
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD			0.	0.	0.	20.0	80.0
TAIL PINCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY			100.	100.	100.	100.	100.
OLFACTORY ORIENTATION							
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE			100.	100.	100.	100.	100.
PUPIL RESPONSE							
PUPIL RESPONSE PRESENT			100.	100.	100.	100.	100.
EYEBLINK RESPONSE							
EYEBLINK RESPONSE PRESENT			100.	100.	100.	100.	100.
FORELIMB EXTENSION							
FORELIMB EXTENSION PRESENT			100.	100.	100.	100.	100.
HINDLIMB EXTENSION							
HINDLIMB EXTENSION PRESENT			100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX							

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 29 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS					PAGE 4 WEEK 12	
		FEMALES						
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION						
GROUP:	NUMBER TESTED:	1	2	3	4	5	1	2
AIR RIGHTING REFLEX	NORMAL	100.	100.	100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY					
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX								
PFOBSUV4.11 10/27/2000 R:07/18/2001								

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 30 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 1  
WEEK 16

GROUP:	NUMBER TESTED:	SENSORY OBSERVATIONS		MALES	
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION	1	2	3
APPROACH RESPONSE			5	5	5
NO REACTION			0	0	1
SLOW APPROACH, SNIFFING OR TURNING AWAY			5	5	4
TOUCH RESPONSE			0	0	0
NO REACTION			5	5	4
ANIMAL MAY SLOWLY TURN, WALK AWAY			5	5	5
STARTLE RESPONSE			0	0	1
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD			5	5	4
TAIL PINCH RESPONSE			5	5	5
ANIMAL MAY SLOWLY TURN, WALK AWAY			5	5	5
OLFACTORY ORIENTATION			5	5	5
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE			5	5	5
PUPIL RESPONSE			5	5	5
PUPIL RESPONSE PRESENT			5	5	5
EYEBLINK RESPONSE			5	5	5
EYEBLINK RESPONSE PRESENT			5	5	5
FORELIMB EXTENSION			5	5	5
FORELIMB EXTENSION PRESENT			5	5	5
HINDLIMB EXTENSION			5	5	5
HINDLIMB EXTENSION PRESENT			5	5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 30 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2	
		WEEK 16	
		SENSORY OBSERVATIONS	
NUMBER OF ANIMALS SHOWING EACH OBSERVATION		MALES	FEMALES
GROUP:		1	2
NUMBER TESTED:		5	5
AIR RIGHTING REFLEX		5	5
NORMAL		5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

TABLE 30 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
		FEMALES	1	2	3	4
GROUP:	NUMBER TESTED:		5	5	5	5
APPROACH RESPONSE						
SLOW APPROACH, SNIFFING OR TURNING AWAY						
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION			5	4	5	5
TOUCH RESPONSE			0	1	0	0
ANIMAL MAY SLOWLY TURN, WALK AWAY						
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION			5	4	5	5
STARTLE RESPONSE			0	1	0	0
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD			5	5	5	5
TAIL PINCH RESPONSE						
ANIMAL MAY SLOWLY TURN, WALK AWAY			5	4	5	5
MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION			0	1	0	0
Olfactory Orientation						
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE			5	5	5	5
PUPIL RESPONSE						
PUPIL RESPONSE PRESENT			5	5	5	5
EYEBLINK RESPONSE						
EYEBLINK RESPONSE PRESENT			5	5	5	5
FORELIMB EXTENSION						
FORELIMB EXTENSION PRESENT			5	5	5	5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 30 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS			
		FEMALES			
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION			
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
HINDLIMB EXTENSION					
HINDLIMB EXTENSION PRESENT		5	5	5	5
AIR RIGHTING REFLEX					
NORMAL		5	5	5	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX					

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10/27/2000  
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PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 31 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:	NUMBER TESTED:	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION	SENSORY OBSERVATIONS				
			MALES	1	2	3	4
				5	5	5	5
APPROACH RESPONSE							
NO REACTION		0.					
SLOW APPROACH, SNIFFING OR TURNING AWAY		100.	0.				
TOUCH RESPONSE							
NO REACTION		0.					
ANIMAL MAY SLOWLY TURN, WALK AWAY		100.	0.				
STARTLE RESPONSE							
SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		0.					
TAIL PINCH RESPONSE							
ANIMAL MAY SLOWLY TURN, WALK AWAY		100.	0.				
OLFACOTORY ORIENTATION							
REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		100.	100.	100.	100.	100.	100.
PUPIL RESPONSE							
PUPIL RESPONSE PRESENT		100.	100.	100.	100.	100.	100.
EYEBLINK RESPONSE							
EYEBLINK RESPONSE PRESENT		100.	100.	100.	100.	100.	100.
FORELIMB EXTENSION							
FORELIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	100.
HINDLIMB EXTENSION							
HINDLIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	100.

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY  
 COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 31 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2 WEEK 16				
		SENSORY OBSERVATIONS				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	MALES	1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
AIR RIGHTING REFLEX	NORMAL	100.	100.	100.	100.	100.
	1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		
	COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX					

TABLE 31 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCL IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENTS

GROUP:	NUMBER TESTED:	PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION					4
		1	2	3	5	5	
APPROACH RESPONSE SLOW APPROACH, SNIFFING OR TURNING AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 20.0	100. 0.	100. 0.	100. 0.	
TOUCH RESPONSE ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 20.0	100. 0.	100. 0.	100. 0.	
STARTLE RESPONSE SLIGHT REACTION, EAR FLICK OR SOME EVIDENCE THAT SNAP WAS HEARD		100.	100.	100.	100.	100.	
TAIL PINCH RESPONSE ANIMAL MAY SLOWLY TURN, WALK AWAY MORE ENERGETIC RESPONSE THAN (2), WITH/WITHOUT VOCALIZATION		100. 0.	80.0 20.0	100. 0.	100. 0.	100. 0.	
OLFACTORY ORIENTATION REACTION PRESENT: ANIMAL APPROACHES SWAB MAKING SNIFFING MOVEMENTS WITH NOSE		100.	100.	100.	100.	100.	
PUPIL RESPONSE PUPIL RESPONSE PRESENT		100.	100.	100.	100.	100.	
EYEBLINK RESPONSE EYEBLINK RESPONSE PRESENT		100.	100.	100.	100.	100.	
FORELIMB EXTENSION FORELIMB EXTENSION PRESENT		100.	100.	100.	100.	100.	
1- 0 MG/KG/DAY 2- 100 MG/KG/DAY 3- 300 MG/KG/DAY 4- 1000 MG/KG/DAY							100.
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX							

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 31 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		SENSORY OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSION						
HINDLIMB EXTENSION PRESENT		100.	100.	100.	100.	100.
AIR RIGHTING REFLEX						
NORMAL		100.	100.	100.	100.	100.
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			
COMPLETE SCORING CRITERIA PRESENTED AS AN APPENDIX						

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10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 3.2 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		NEUROMUSCULAR OBSERVATIONS				
		MALES				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN S.D.	535.0 56.03	608.2 108.04	633.4 62.47	573.4 101.77
ROTAROD PERFORMANCE (seconds)		HIND: MEAN S.D.	268.4 52.56	263.4 40.13	251.6 32.24	283.4 52.65
HINDLIMB FOOTSPRAY (mm)		: MEAN S.D.	99.5 45.75	120.0 0.00	98.9 47.18	95.9 33.08
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 3.2 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		NEUROMUSCULAR OBSERVATIONS				
		FEMALES				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	4	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN S.D.	593.4 52.68	558.4 76.71	551.6 31.14	526.8 87.06
ROTAROD PERFORMANCE (seconds)		HIND: MEAN S.D.	256.6 38.73	255.2 53.17	300.2 54.92	251.6 37.51
HINDLIMB FOOTSPAN (mm)		: MEAN S.D.	56.9 58.13	98.0 49.28	64.3 51.13	113.6 14.40
1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY			48.8 12.76	57.4 23.49	54.0 15.41	51.0 24.19

PFOB/SUv4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 33 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		NEUROMUSCULAR OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT		100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN S.D. HIND: MEAN S.D.	535.0 56.03 268.4 52.56	608.2 108.04 263.4 40.13	633.4 62.47 251.6 32.24	573.4 101.77 283.4 52.65	
ROTAROD PERFORMANCE (seconds)	: MEAN S.D.	99.5 45.75	120.0 0.00	98.9 47.18	95.9 33.08	
HINDLIMB FOOTSPRAY (mm)	: MEAN S.D.	83.4 14.72	83.2 3.63	65.8 14.62	67.8 26.44	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-136012  
SPONSOR : CMA-BFRIP

TABLE 33 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		NEUROMUSCULAR OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT		100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN S.D. HIND: MEAN S.D.	493.4 52.68 256.6 38.73	558.4 76.71 255.2 53.17	551.6 31.14 300.2 54.92	526.8 87.06 251.6 37.51
ROTAROD PERFORMANCE (seconds)		: MEAN S.D.	56.9 58.13	98.0 49.28	64.3 51.13	113.6 14.40
HINDLIMB FOOTSPRAY (mm)		: MEAN S.D.	48.8 12.76	57.4 23.49	54.0 15.41	51.0 24.19
1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY						

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-196012  
SPONSOR : CMA-BFRIP

TABLE 34 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		NEUROMUSCULAR OBSERVATIONS				
		NUMBER OF ANIMALS SHOWING EACH OBSERVATION				
		MALES				
GROUP:		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.
ROTAROD PERFORMANCE (seconds)		: MEAN S.D.	: MEAN S.D.	: MEAN S.D.	: MEAN S.D.	: MEAN S.D.
HINDLIMB FOOTSPRAY (mm)						
1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY		102.0 16.69	82.0 22.77	64.6 21.27	84.4 16.46	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 34 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

GROUP:		1		2		3		4	
NUMBER TESTED:		5		5		5		5	
<b>HINDLIMB EXTENSOR STRENGTH</b>									
HINDLIMB	RESISTANCE PRESENT	GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN	791.8	923.4	954.8	938.2	
				S.D.	252.36	419.23	213.82	294.20	
				HIND: MEAN	671.6	728.2	810.0	719.8	
				S.D.	142.97	159.10	120.68	110.12	
ROTAROD PERFORMANCE (seconds)		: MEAN		54.4	47.5	73.1	81.2		
		S.D.		40.34	41.21	50.11	53.34		
HINDLIMB FOOTSPLAY (mm)		: MEAN		69.8	71.2	73.4	82.4		
		S.D.		9.98	26.99	14.88	30.74		
1- 0 MG/KG/DAY		2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY					

PFOB SUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 35 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 1  
WEEK 12

		NEUROMUSCULAR OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH						
HINDLIMB RESISTANCE PRESENT		100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB						
FORE: MEAN S.D.		1268.4 413.04	1041.6 418.44	1211.8 266.63	1293.2 256.21	
HIND: MEAN S.D.		1005.0 309.85	798.2 91.26	965.0 149.44	965.0 181.53	
ROTAROD PERFORMANCE (seconds)						
: MEAN S.D.		71.9 47.77	44.1 49.37	53.1 40.37	62.9 48.79	
HINDLIMB FOOTSPRAY (mm)						
: MEAN S.D.		102.0 16.69	82.0 22.77	64.6 21.27	84.4 16.46	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 35 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

## NEUROMUSCULAR OBSERVATIONS

## FEMALES

## PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION

NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT	100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN S.D. HIND: MEAN S.D.	791.8 252.36 671.6 142.97	923.4 419.23 728.2 159.10	954.8 213.82 810.0 120.68	938.2 294.20 719.8 110.12
ROTAROD PERFORMANCE (seconds)	: MEAN S.D.	54.4 40.34	47.5 41.21	73.1 50.11	81.2 53.34
HINDLIMB FOOTSPAN (mm)	: MEAN S.D.	69.8 9.98	71.2 26.99	73.4 14.88	82.4 30.74
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 36 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBBD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PAGE 1  
WEEK 16

NEUROMUSCULAR OBSERVATIONS					
MALES					
NUMBER OF ANIMALS SHOWING EACH OBSERVATION					
GROUP:		1	2	3	4
NUMBER TESTED:		5	5	5	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT		5	5	5	5
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN S.D.	1058.4 174.06	686.6 256.20	961.6 373.04	906.6 427.64
	HIND: MEAN S.D.	505.0 120.70	453.2 144.70	445.0 120.42	520.0 251.70
ROTAROD PERFORMANCE (seconds)	: MEAN S.D.	51.5 62.54	50.9 53.52	55.7 19.88	34.7 48.06
HINDLIMB FOOTSPRAY (mm)	: MEAN S.D.	77.0 24.42	59.6 17.44	55.2 21.37	50.2 17.46
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 36 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

NEUROMUSCULAR OBSERVATIONS		FEMALES				
NUMBER OF ANIMALS SHOWING EACH OBSERVATION						
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH						
HINDLIMB RESISTANCE PRESENT						
GRIP STRENGTH (g) - FORE/HINDLIMB		FORE: MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.
		681.6 354.49	655.0 377.59	699.8 277.97	761.6 299.92	
		370.0 43.95	343.4 140.86	401.6 112.25	445.0 117.48	
ROTAROD PERFORMANCE (seconds)	:	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.
		104.6 34.35	69.4 55.11	96.6 52.32	102.1 39.94	
HINDLIMB FOOTSPRAY (mm)	:	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.	MEAN S.D.
		45.6 12.72	36.4 22.19	45.6 12.40	43.4 10.81	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PFOBSU4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 37 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 1 WEEK 16				
		NEUROMUSCULAR OBSERVATIONS				
		MALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
GROUP:	NUMBER TESTED:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT		100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN S.D. HIND: MEAN S.D.	1058.4 174.06 505.0 120.70	686.6 256.20 453.2 144.70	961.6 373.04 445.0 120.42	906.6 427.64 520.0 251.70	
ROTAROD PERFORMANCE (seconds)	: MEAN S.D.	51.5 62.54	50.9 53.52	55.7 19.88	34.7 48.06	
HINDLIMB FOOTDISPLAY (mm)	: MEAN S.D.	77.0 24.42	59.6 17.44	55.2 21.37	50.2 17.46	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 3.7 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

		PAGE 2 WEEK 16				
		NEUROMUSCULAR OBSERVATIONS				
		FEMALES				
		PERCENTAGE OF ANIMALS SHOWING EACH OBSERVATION				
NUMBER TESTED:	GROUP:	1	2	3	4	5
HINDLIMB EXTENSOR STRENGTH HINDLIMB RESISTANCE PRESENT		100.	100.	100.	100.	100.
GRIP STRENGTH (g) - FORE/HINDLIMB	FORE: MEAN S.D.	681.6 354.49	655.0 377.59	699.8 277.97	761.6 299.92	
	HIND: MEAN S.D.	370.0 43.95	343.4 140.86	401.6 112.25	445.0 117.48	
ROTAROD PERFORMANCE (seconds)	: MEAN S.D.	104.6 34.35	69.4 55.11	96.6 52.32	102.1 39.94	
HINDLIMB FOOTDISPLAY (mm)	: MEAN S.D.	45.6 12.72	36.4 22.19	45.6 12.4	43.4 10.81	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 38 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS  
MALES

GROUP :		1	2	3	4	5
NUMBER TESTED:		5	5	5	5	5
CATALEPSY (seconds)	: MEAN S.D. N	0.6 0.13 5	0.6 0.25 5	0.6 0.15 5	0.6 0.17 5	0.6 0.17 5
BODY TEMPERATURE (degrees C)	: MEAN S.D. N	38.2 0.19 5	38.3 0.47 5	38.2 0.33 5	38.1 0.33 5	38.1 0.33 5
BODY WEIGHT (g)	: MEAN S.D. N	226.2 15.97 5	224.1 23.90 5	238.2 24.93 5	221.9 14.78 5	221.9 14.78 5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 38 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS  
FEMALES

GROUP:	NUMBER TESTED:	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (g)	1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY
		: MEAN S.D. N	: MEAN S.D. N	: MEAN S.D. N				
		5	5	5				
		0.6 0.11 5	0.6 0.11 5	38.2 0.29 5	172.2 13.26 5	170.5 11.14 5	170.4 19.51 5	178.4 20.34 5

PFOBSUV4.11  
03/12/2001  
R:07/18/2001

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 39 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS  
MALES

GROUP:				1	2	3	4	5
NUMBER TESTED:				5	5	5	5	5
CATALEPSY (seconds)	:	MEAN		0.4	0.5	0.3	0.8	
		S.D.		0.13	0.22	0.11	1.00	
		N		5	4	5	5	
BODY TEMPERATURE (degrees C)	:	MEAN		38.5	38.4	38.0	38.3	
		S.D.		0.56	0.75	0.90	0.58	
		N		5	5	5	5	
BODY WEIGHT (g)	:	MEAN		547.2	515.4	559.0	514.2	
		S.D.		39.01	92.19	55.64	63.76	
		N		5	5	5	5	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY					

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 39 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS			
FEMALES			
GROUP:		1	2
NUMBER TESTED:		5	5
CATALEPSY (seconds)	: MEAN S.D. N	0.4 0.12 5	0.4 0.18 5
BODY TEMPERATURE (degrees C)	: MEAN S.D. N	38.8 0.19 .5	39.0 0.25 5
BODY WEIGHT (g)	: MEAN S.D. N	297.4 33.72 5	289.7 37.67 5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 40 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE

PHYSIOLOGICAL OBSERVATIONS  
MALES

GROUP:	1	2	3	4	5
NUMBER TESTED:	5	5	5	5	5
CATALEPSY (seconds)	: MEAN S.D. N	1.4 1.39 5	0.5 0.15 5	0.5 0.13 5	0.5 0.13 5
BODY TEMPERATURE (degrees C)	: MEAN S.D. N	38.3 0.56 5	38.4 0.55 5	38.4 0.50 5	38.2 0.34 5
BODY WEIGHT (g)	: MEAN S.D. N	571.7 31.06 5	528.0 89.30 5	563.2 53.63 5	526.4 72.55 5

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 40 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
FUNCTIONAL OBSERVATIONAL BATTERY SUMMARY INCIDENCE  
WEEK 16

PHYSIOLOGICAL OBSERVATIONS			
FEMALES			
GROUP:		1	2
NUMBER TESTED:		5	5
CATALEPSY (seconds)	: MEAN S.D. N	0.5 0.19 5	0.6 0.15 5
BODY TEMPERATURE (degrees C)	: MEAN S.D. N	38.4 0.67 4	37.9 0.47 5
BODY WEIGHT (g)	: MEAN S.D. N	301.8 33.45 5	296.2 28.25 5
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY

PFOBSUV4.11  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 41  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROUP MEAN MOTOR ACTIVITY COUNTS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E								
<b>PRETEST</b>												
TOTAL	944.			684.			683.			547.		
MEAN	412.6			486.2			130.5			298.1		
S.D.	5			5			5			5		
N												
AMBULATORY	326.			218.			187.			162.		
MEAN	128.9			182.3			59.0			125.3		
S.D.	5			5			5			5		
N												
WEEK 12												
TOTAL	834.			937.			1054.			1164.		
MEAN	209.1			460.4			248.5			121.8		
S.D.	5			5			5			5		
N												
AMBULATORY	168.			164.			253.			236.		
MEAN	70.1			111.7			98.1			57.9		
S.D.	5			5			5			5		
N												
WEEK 16												
TOTAL	750.			830.			556.			778.		
MEAN	262.6			262.9			62.8			132.5		
S.D.	5			5			5			5		
N												
AMBULATORY	154.			160.			103.			170.		
MEAN	55.6			76.0			21.1			56.8		
S.D.	5			5			5			5		
N												

PROJECT NO : WTL-186012  
 SPONSOR : CMA-BFRIP

TABLE 41  
 A 90-DAY ORAL TOXICITY STUDY OF RBCD IN RATS  
 GROUP MEAN MOTOR ACTIVITY COUNTS

GROUP:	0 MG/KG/DAY					100 MG/KG/DAY					300 MG/KG/DAY					1000 MG/KG/DAY											
	F	E	M	A	L	E	F	E	M	A	L	E	F	E	M	A	L	E	F	E	M	A	L	E			
<b>PRETEST</b>																											
TOTAL	961.						852.						996.														
MEAN	383.5						446.4						254.7														
S.D.	5						5						5														
AMBULATORY																											
MEAN	349.						295.						341.														
S.D.	167.7						156.4						91.8														
N	5						5						5														
<b>WEEK 12</b>																											
TOTAL	792.						700.						1004.														
MEAN	339.8						529.8						271.6														
S.D.	5						5						5														
AMBULATORY																											
MEAN	255.						201.						321.														
S.D.	112.9						175.9						158.2														
N	5						5						5														
<b>WEEK 16</b>																											
TOTAL	1006.						869.						1047.														
MEAN	415.6						517.7						430.4														
S.D.	5						5						5														
AMBULATORY																											
MEAN	353.						291.						340.														
S.D.	183.7						219.4						173.3														
N	5						5						5														

PMAS TM 4.14  
 10/2/2000  
 R:07/18/2001

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		WHITE CELL (thous./uL)	MEAN	S.D.	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK	3	16.7	13.1	1.10	14.2	12.9	9	14.0	13.0	5	14.0	3.41	5
		4.00	2.10	5	3.62	2.76	10					3.21	5
WEEK	13	MEAN	14.2		14.2			11.4			12.7		
		S.D.	3.62		3.62			2.70			2.70		
		N	10		10			10			10		
WEEK	17	MEAN	14.9		14.9			14.0			14.6		
		S.D.	2.88		2.88			3.32			2.83		
		N	5		5			5			5		
RED CELLS (mil/uL)	3	7.16	7.38	0.125	8.01	8.18	0.240	8.07	7.35	5	7.72	0.217	5
		0.229	0.125	5	0.515	0.240	10	0.628	0.576		0.576	0.384	
		S.D.			S.D.								
		N			N								
WEEK	13	MEAN	8.01		8.01			8.07			7.72		
		S.D.	0.515		0.515			0.628			0.628		
		N	10		10			10			10		
WEEK	17	MEAN	8.57		8.57			8.73			8.54		
		S.D.	0.655		0.655			0.417			0.479		
		N	5		5			5			5		

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E	M	A	L	E	M	A	L	E
HEMOGLOBIN (g/dL)													
WEEK	3	MEAN	14.2			14.7				14.9*			
		S.D.	0.37			0.31				0.19			
		N	5			5				5			
WEEK	13	MEAN	14.6			14.9				14.9			
		S.D.	0.80			0.38				0.84			
		N	10			10				10			
WEEK	17	MEAN	15.5			15.4				15.7			
		S.D.	0.82			0.81				0.62			
		N	5			5				5			
HEMATOCRIT (%)													
WEEK	3	MEAN	40.9			42.5*				42.7*			
		S.D.	1.03			0.74				0.84			
		N	5			5				5			
WEEK	13	MEAN	41.3			41.8				42.2			
		S.D.	2.61			1.31				2.71			
		N	10			10				10			
WEEK	17	MEAN	42.2			42.2				42.9			
		S.D.	2.20			1.86				1.43			
		N	5			5				5			

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,

fL = FEMTOLITERS

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF RBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E			M A L E			M A L E		M A L E	
MCV (fL)	3	57.1		57.5			58.1			57.9			
	MEAN	1.15		1.18			1.35			2.08			
	S.D.	5		5			5			5			
	N												
WEEK	13	MEAN	51.6		51.2		52.4			53.1			
	S.D.	1.29		1.27		1.81			2.31				
	N	10		10		10			9				
WEEK	17	MEAN	49.4		48.3		50.3			49.8			
	S.D.	3.05		1.13		1.23			2.29				
	N	5		5		5			5				
MCH (uug)	3	19.8		19.9			20.3			20.0			
	MEAN	0.48		0.46			0.45			0.90			
	S.D.	5		5			5			5			
	N												
WEEK	13	MEAN	18.2		18.2		18.6			18.7			
	S.D.	0.59		0.49		0.91			0.77				
	N	10		10		10			9				
WEEK	17	MEAN	18.1		17.7		18.4			18.4			
	S.D.	0.98		0.51		0.53			0.85				
	N	5		5		5			5				

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,  
fL = FEMTOLITERS

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY			
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	
MCHC (g/dL)	WEEK 3	34.8	0.21	5	34.6	0.40	5	34.9	0.34	5	34.5	0.36	5	
	S.D.													
	N													
WEEK	13	MEAN	35.4	0.56	10	35.7	0.53	10	35.4	0.74	10	35.2	0.51	9
		S.D.												
	N													
WEEK	17	MEAN	36.6	0.70	5	36.6	0.36	5	36.6	0.81	5	36.9	0.29	5
		S.D.												
	N													
PLATELET (thous./uL)	WEEK 3	973.	174.3	5	1109.	148.8	5	999.	96.2	5	1046.	116.8	5	
	S.D.													
	N													
WEEK	13	MEAN	1298.	261.7	10	1342.	196.9	10	1327.	299.3	10	1035.	144.7	9
		S.D.												
	N													
WEEK	17	MEAN	1353.	75.7	5	1534.	101.1	5	1439.	130.7	5	1447.	202.3	5
		S.D.												
	N													

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,  
fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	PROTIME (seconds)	0 MG/KG/DAY		100 MG/KG/DAY		300 MG/KG/DAY		1000 MG/KG/DAY	
			MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
WEEK	3	N	NA		NA		NA		NA	
WEEK	13	MEAN S.D. N	13.5 0.37 10		15.6* 2.10 10		15.7* 2.06 10		15.4* 1.42 9	
WEEK	17	MEAN S.D. N	14.2 1.23 5		13.3 0.98 5		13.3 0.85 5		14.0 0.76 5	
APTT	3	MEAN S.D. N	NA		NA		NA		NA	
WEEK	13	MEAN S.D. N	19.9 2.10 10		23.2 2.75 10		24.5 3.99 10		24.0 6.14 9	
WEEK	17	MEAN S.D. N	18.5 0.54 5		19.2 1.71 5		18.3 1.09 5		20.4 1.00 5	

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, uLg = PICOGRAMS,

fL = FEMTOLITERS

\* = Significantly different from the control group at 0.05 using Dunnett's test  
 NA = NOT APPLICABLE

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	F E M A L E			M A L E		
		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
<b>WHITE CELL (thous./<math>\mu</math>L)</b>							
WEEK	3	MEAN	9.9	9.8	13.2	11.5	
		S.D.	1.61	2.99	3.96	1.44	
		N	5	5	5	5	
WEEK	13	MEAN	8.2	8.8	9.6	9.0	
		S.D.	2.87	2.08	1.66	3.47	
		N	10	10	10	10	
WEEK	17	MEAN	8.2	10.2	7.8	8.8	
		S.D.	2.60	3.48	1.64	3.12	
		N	5	5	5	5	
<b>RED CELLS (mil./<math>\mu</math>L)</b>							
WEEK	3	MEAN	6.88	6.89	7.01	7.13	
		S.D.	0.264	0.442	0.281	0.339	
		N	5	5	5	5	
WEEK	13	MEAN	7.01	7.14	6.64	7.12	
		S.D.	0.653	0.635	0.964	0.624	
		N	10	10	10	10	
WEEK	17	MEAN	7.61	7.61	7.60	7.49	
		S.D.	0.267	0.819	0.242	0.122	
		N	5	5	5	5	

g/dL = GRAMS/DECILITER, thous./ $\mu$ L = THOUSANDS/MICROLITER, mil./ $\mu$ L = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
HEMOGLLOBIN (g/dL)													
WEEK 3	MEAN	13.7				13.9				14.1			14.3
	S.D.	0.41				1.08				0.45			0.52
	N	5				5				5			5
WEEK 13	MEAN	13.8				13.6				12.9			13.6
	S.D.	1.29				1.05				1.43			1.01
	N	10				10				10			10
WEEK 17	MEAN	14.8				14.7				14.6			14.9
	S.D.	0.38				1.01				0.25			0.19
	N	5				5				5			5
HEMATOCRIT (%)													
WEEK 3	MEAN	39.9				40.5				41.6			42.2
	S.D.	0.77				3.30				1.25			1.77
	N	5				5				5			5
WEEK 13	MEAN	38.4				38.1				36.3			38.3
	S.D.	3.70				2.98				4.49			2.84
	N	10				10				10			10
WEEK 17	MEAN	39.9				40.1				40.0			40.6
	S.D.	1.20				3.06				1.11			0.51
	N	5				5				5			5

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, ml/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,

fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS GROUP:			0 MG/KG/DAY	- F E M A L E -	300 MG/KG/DAY	1000 MG/KG/DAY
MCV (fL)	WEEK 3	MEAN S.D. N	58.1 1.85 5	58.7 1.37 5	59.4 0.98 5	59.2 1.98 5
	WEEK 13	MEAN S.D. N	54.7 1.20 10	53.5 1.04 10	54.9 2.47 10	53.8 1.71 10
	WEEK 17	MEAN S.D. N	52.5 1.24 5	53.0 2.11 5	52.7 1.29 5	54.1 0.55 5
MCH (uug)	WEEK 3	MEAN S.D. N	19.9 0.73 5	20.2 0.57 5	20.1 0.19 5	20.1 0.67 5
	WEEK 13	MEAN S.D. N	19.7 0.48 10	19.1 0.65 10	19.6 1.29 10	19.1 0.70 10
	WEEK 17	MEAN S.D. N	19.4 0.54 5	19.5 0.99 5	19.1 0.30 5	19.9 0.31 5

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,

fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS GROUP :			0 MG/KG/DAY	F E M A L E -	300 MG/KG/DAY	1000 MG/KG/DAY
MCHC (g/dL)	MEAN		34.3	34.3	33.9	34.0
WEEK	3	S.D.	0.63	0.48	0.41	0.38
		N	5	5	5	5
WEEK	13	MEAN	35.9	35.7	35.7	35.4
		S.D.	0.29	0.68	0.92	0.47
		N	10	10	10	10
WEEK	17	MEAN	37.0	36.8	36.3	36.7
		S.D.	0.41	0.41	0.60	0.52
		N	5	5	5	5
PLATELET (thous./uL)						
WEEK	3	MEAN	1213.	980.	1097.	1121.
		S.D.	181.5	176.0	94.1	134.4
		N	5	5	5	5
WEEK	13	MEAN	1296.	1199.	1153.	1172.
		S.D.	350.5	518.8	159.2	491.3
		N	10	10	10	10
WEEK	17	MEAN	1300.	1423.	1310.	1346.
		S.D.	183.5	59.2	147.2	89.6
		N	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

None significantly different from control group

TABLE 42  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 HEMATOLOGY VALUES -- SUMMARY OF MEANS

ANALYSIS		GROUP:		0 MG/KG/DAY		100 MG/KG/DAY		300 MG/KG/DAY		1000 MG/KG/DAY	
WEEK	PROTIME (seconds)	MEAN	S.D.	NA	NA	NA	NA	NA	NA	NA	NA
WEEK	13	MEAN		13.3		12.6*		12.6*		12.9	
		S.D.		0.48		0.44		0.54		0.79	
		N		10		10		10		10	
WEEK	17	MEAN		12.3		12.0		12.2		12.6	
		S.D.		0.78		0.41		0.58		1.47	
		N		5		5		5		5	
APTT (seconds)	3	MEAN				NA		NA		NA	
		S.D.				NA		NA		NA	
		N				NA		NA		NA	
WEEK	13	MEAN		16.4		17.7		16.6		16.0	
		S.D.		2.35		4.31		3.92		4.37	
		N		10		10		10		10	
WEEK	17	MEAN		15.4		13.7		17.3		17.6	
		S.D.		0.76		1.80		1.28		6.06	
		N		5		5		5		5	

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
 fL = FEMTOLITERS

\* = Significantly different from the control group at 0.05 using Dunnett's test  
 NA = NOT APPLICABLE

PCPSv4.04  
 10/27/2000  
 R:07/18/2001

TABLE 43  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE DIFFERENTIAL COUNT (%) -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E	M	A	L	E	M	A	L	E
<b>NEUTROPHIL</b>													
WEEK	3	MEAN	15			16				12			
		S.D.	4.8			8.9				4.3			
		N	5			5				5			
WEEK	13	MEAN	23			23				19			
		S.D.	9.2			9.8				7.7			
		N	10			10				10			
WEEK	17	MEAN	12			12				15			
		S.D.	4.3			1.9				7.3			
		N	5			5				5			
<b>LYMPHOCYTE</b>													
WEEK	3	MEAN	77			75				79			
		S.D.	6.8			9.8				4.2			
		N	5			5				5			
WEEK	13	MEAN	63			63				68			
		S.D.	8.0			11.3				8.5			
		N	10			10				10			
WEEK	17	MEAN	73			74				72			
		S.D.	4.2			3.6				11.7			
		N	5			5				5			

None significantly different from control group

TABLE 43  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE DIFFERENTIAL COUNT (%) - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
<b>MONOCYTE</b>													
WEEK	3	7	2.2	5	12	2.7	10	12	2.7	10	11	1.9	9
WEEK	13	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK	17	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
<b>EOSINOPHIL</b>													
WEEK	3	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK	13	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK	17	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 43  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE DIFFERENTIAL COUNT (%) -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
BASOPHIL	3	0			0			0			0		
WEEK		0.0		5	0.0		5	0.0		5	0.0		5
	13	MEAN	S.D.	N	2			1			1		
		0.7		10	0.7		10	0.7		10	0.6		10
	17	MEAN	S.D.	N	1			1			1		
		0.7		5	0.7		5	0.8		5	0.5		5

TABLE 43  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE DIFFERENTIAL COUNT (%) -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
<b>NEUTROPHIL</b>													
WEEK	3	MEAN	12		20		10		2.5		1.0		
		S.D.	5.3		10.5				5		1.1		
		N	5		5				5		5		
WEEK	13	MEAN	16		19		19				2.1		
		S.D.	7.9		9.7						9.4		
		N	10		10						10		
WEEK	17	MEAN	14		12		17				1.2		
		S.D.	6.7		8.8						2.9		
		N	5		5						5		
<b>LYMPHOCYTE</b>													
WEEK	3	MEAN	81		73		83				84		
		S.D.	5.7		9.4		3.6				1.8		
		N	5		5		5				5		
WEEK	13	MEAN	73		69		69				66		
		S.D.	9.4		11.4		5.0				10.8		
		N	10		10		10				10		
WEEK	17	MEAN	76		77		71				76		
		S.D.	6.9		10.9		9.3				5.1		
		N	5		5		5				5		

None significantly different from control group

TABLE 43  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 LEUKOCYTE DIFFERENTIAL COUNT (%) -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY				100 MG/KG/DAY				300 MG/KG/DAY				1000 MG/KG/DAY			
		F	E	M	A	L	E	F	E	M	A	L	E	F	E	M	A
<b>MONOCYTE</b>																	
WEEK	3	MEAN	7	5	5	5	6	6	1.5	1.5	6	6	1.6	1.6	1.6	1.6	1.6
		S.D.	3.3	5	5	5			5	5			5	5	5	5	5
		N	5	5	5	5			5	5			5	5	5	5	5
WEEK	13	MEAN	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10
		S.D.	3.2	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9
		S.D.	1.1	3.3	3.3	3.3	5	5	5	5	5	5	5	5	5	5	5
		N	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
<b>EOSINOPHIL</b>																	
WEEK	3	MEAN	0	0	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
		S.D.	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
		N	5	5	5	5			5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	2	2	2	2	2	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		S.D.	0.7	0.7	0.7	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	2	2	2	2	2	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		S.D.	0.9	0.9	0.9	0.9	5	5	5	5	5	5	5	5	5	5	5
		N	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 43  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE DIFFERENTIAL COUNT (%) -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
BASOPHIL													
WEEK	3	MEAN	0		0		0		0		0		0
		S.D.	0.0		0.0		0.0		0.0		0.0		0.0
		N	5		5		5		5		5		5
WEEK	13	MEAN	1		1		1		1		1		1
		S.D.	0.6		0.6		0.7		0.6		0.8		1.0
		N	10		10		10		10		10		10
WEEK	17	MEAN	0		1		0		0		1		1
		S.D.	0.5		0.5		0.5		0.5		0.4		0.5
		N	5		5		5		5		5		5

PCPSv4.04  
10/27/2000  
R:07/18/2001

TABLE 44  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
NEUTROPHIL (thous./uL)													
WEEK 3	MEAN	2.4			2.1			1.5			1.6		
	S.D.	0.35			1.23			0.38			0.44		
	N	5			5			5			5		
WEEK 13	MEAN	3.1			2.8			2.1			2.6		
	S.D.	1.00			1.38			0.79			1.29		
	N	10			10			10			9		
WEEK 17	MEAN	1.9			1.6			2.3			1.6		
	S.D.	0.75			0.23			1.31			0.52		
	N	5			5			5			5		
LYMPHOCYTE (thous./uL)													
WEEK 3	MEAN	13.0			9.8			10.4			11.3		
	S.D.	4.10			1.72			3.07			2.87		
	N	5			5			5			5		
WEEK 13	MEAN	8.9			8.2			7.8			8.3		
	S.D.	2.72			2.73			2.55			1.68		
	N	10			10			10			9		
WEEK 17	MEAN	10.8			10.3			10.5			9.7		
	S.D.	2.08			2.68			2.67			2.97		
	N	5			5			5			5		

thous./uL = THOUSANDS/MICROLITER

None significantly different from control group

TABLE 44  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUCOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS	GROUP:	MONOCYTE (thous./uL)	0 MG/KG/DAY			100 MG/KG/DAY			M A L E			300 MG/KG/DAY			1000 MG/KG/DAY		
			MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK	3	MEAN	1.1	0.21	5	1.1	0.31	5	1.1	0.33	5	1.0	0.31	5	0.9	0.16	5
		S.D.															
		N															
WEEK	13	MEAN	1.7	0.67	10	1.5	0.42	10	1.2	0.22	10	1.4	0.52	9			
		S.D.															
		N															
WEEK	17	MEAN	1.7	0.46	5	1.6	0.47	5	1.5	0.75	5	1.3	0.40	5			
		S.D.															
		N															
EOSINOPHIL (thous./uL)																	
WEEK	3	MEAN	0.2	0.09	5	0.1	0.06	5	0.1	0.07	5	0.1	0.07	5	0.1	0.07	5
		S.D.															
		N															
WEEK	13	MEAN	0.3	0.12	10	0.2	0.08	10	0.1	0.04	10	0.2	0.08	9			
		S.D.															
		N															
WEEK	17	MEAN	0.4	0.13	5	0.3	0.15	5	0.3	0.06	5	0.3	0.10	5			
		S.D.															
		N															

thous./uL = THOUSANDS/MICROLITER

TABLE 44  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 LEUCOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS			GROUP:			0 MG/KG/DAY			M A L E			300 MG/KG/DAY			1000 MG/KG/DAY		
BASOPHIL (thous./uL)						100 MG/KG/DAY						300 MG/KG/DAY					
WEEK	MEAN	S.D.		MEAN	S.D.		MEAN	S.D.		MEAN	S.D.		MEAN	S.D.		MEAN	S.D.
WEEK 3	0.0	0.0	N	0.0	0.0	N	0.0	0.0	N	0.0	0.0	N	0.0	0.0	N	0.0	0.0
WEEK 13	0.2	0.14	N	0.14	0.14	N	0.1	0.09	N	0.1	0.06	N	0.1	0.06	N	0.1	0.23
WEEK 17	0.2	0.13	N	0.13	0.13	N	0.1	0.15	N	0.1	0.08	N	0.1	0.08	N	0.1	0.03

thous./uL = THOUSANDS/MICROLITER

TABLE 44  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 LEUKOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS GROUP:			0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
NEUTROPHIL (thous./uL)			F E M A L E			F E M A L E			F E M A L E			F E M A L E		
WEEK	MEAN	S.D.	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
WEEK 3	1.1	0.49	1.9	0.86	5	1.9	0.42	5	1.3	0.42	5	1.1	0.13	5
WEEK 13	1.2	0.41	1.5	0.57	10	1.5	0.57	10	1.8	0.76	10	2.0	1.85	10
WEEK 17	1.1	0.72	1.3	1.53	5	1.3	0.29	5	1.3	0.29	5	1.0	0.33	5
LYMPHOCYTE (thous./uL)														
WEEK 3	8.1	1.91	7.3	2.85	5	7.3	2.85	5	11.0	3.32	5	9.6	1.12	5
WEEK 13	6.1	2.50	6.2	2.18	10	6.2	2.18	10	6.6	1.51	10	5.8	1.89	10
WEEK 17	6.2	2.12	7.7	2.34	5	7.7	2.34	5	5.6	1.66	5	6.8	2.87	5

thous./uL = THOUSANDS/MICROLITER

None significantly different from control group

TABLE 44  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 LEUKOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	M	A	L	E	F	M	A	L	E	F	M
<b>MONOCYTE (thous./uL)</b>													
WEEK	3	MEAN	0.6	0.5	0.25	0.25	0.7	0.9	0.39	0.21	0.5	0.7	0.25
		S.D.	0.25	0.25	0.25	0.25			5	5	5		5
		N	5	5	5	5							
WEEK	13	MEAN	0.7	0.8	0.33	0.33	10	10	10	10	10	10	10
		S.D.	0.33	0.33	0.33	0.33							
		N	10	10	10	10							
WEEK	17	MEAN	0.7	0.9	0.26	0.26	5	5	5	5	5	5	5
		S.D.	0.26	0.26	0.26	0.26							
		N	5	5	5	5							
<b>EOSINOPHIL (thous./uL)</b>													
WEEK	3	MEAN	0.0	0.1	0.05	0.05	5	0.1	0.13	0.07	0.07	5	0.1
		S.D.	0.05	0.05	0.05	0.05			5	5	5		5
		N	5	5	5	5							
WEEK	13	MEAN	0.1	0.2	0.05	0.05	10	0.2	0.08	0.06	0.06	10	0.1
		S.D.	0.05	0.05	0.05	0.05			10	10	10		10
		N	10	10	10	10							
WEEK	17	MEAN	0.2	0.2	0.04	0.04	5	0.2	0.04	0.03	0.03	5	0.2
		S.D.	0.04	0.04	0.04	0.04			5	5	5		5
		N	5	5	5	5							

thous./uL = THOUSANDS/MICROLITER

TABLE 44  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
LEUKOCYTE COUNTS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
BASOPHIL (thous./ $\mu$ L)													
WEEK	3	MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		S.D.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		S.D.	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		S.D.	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		N	5	5	5	5	5	5	5	5	5	5	5

thous./ $\mu$ L = THOUSANDS/MICROLITER

PCPSv4.04  
10/27/2000  
R:07/18/2001

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY			
				M	A	L	E			M	G	K	M	G
<b>ALBUMIN (g/dL)</b>														
WEEK	3	MEAN	4.2		4.4*			4.4		4.4			4.5**	
		S.D.	0.08	0.08	0.18			0.12		0.12			0.09	
		N	5	5	5			5		5			5	
WEEK	13	MEAN	4.3		4.6*			4.7**		4.7**			4.9**	
		S.D.	0.14	0.14	0.15			0.25		0.25			0.19	
		N	10	10	10			10		10			9	
WEEK	17	MEAN	4.3		4.4			4.6*		4.6*			4.4	
		S.D.	0.22	0.22	0.07			0.16		0.16			0.09	
		N	5	5	5			5		5			5	
<b>TOTAL PROTEIN (g/dL)</b>														
WEEK	3	MEAN	6.4		6.5			6.5		6.5			6.7	
		S.D.	0.31	0.31	0.19			0.40		0.40			0.13	
		N	5	5	5			5		5			5	
WEEK	13	MEAN	7.0		7.2			7.2		7.2			7.6**	
		S.D.	0.30	0.30	0.28			0.42		0.42			0.32	
		N	10	10	10			10		10			9	
WEEK	17	MEAN	7.0		7.1			7.5		7.5			7.2	
		S.D.	0.40	0.40	0.30			0.40		0.40			0.23	
		N	5	5	5			5		5			5	

U/L = INTERNATIONAL UNIT/LITER,      g/dL = GRAMS/DECILITER,      mg/dL = MILLIGRAMS/DECILITER,  
mEq/L = milliequivalents/Liter

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY			
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	
GLOBULIN (g/dL)	WEEK 3	2.2	0.23	5	2.1	0.15	5	2.1	0.41	5	2.1	0.11	5	
	S.D.													
	N													
	WEEK 13	MEAN	2.6	0.27	10	2.6	0.20	10	2.5	0.29	10	2.7	0.22	9
	S.D.													
	N													
	WEEK 17	MEAN	2.6	0.32	5	2.7	0.36	5	2.9	0.25	5	2.7	0.22	5
	S.D.													
	N													
A/G RATIO	WEEK 3	MEAN	1.93	0.167	5	2.15	0.202	5	2.19	0.462	5	2.13	0.124	5
	S.D.													
	N													
	WEEK 13	MEAN	1.67	0.197	10	1.74	0.123	10	1.89	0.268	10	1.84	0.152	9
	S.D.													
	N													
	WEEK 17	MEAN	1.65	0.204	5	1.68	0.239	5	1.62	0.097	5	1.63	0.139	5
	S.D.													
	N													

U/L = INTERNATIONAL UNIT/LITER,  
 g/dL = GRAMS/DECILITER,  
 mEq/L = milliequivalents/Liter      mg/dL = MILLIGRAMS/DECILITER,

None significantly different from control group

TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY	M A L E		300 MG/KG/DAY	1000 MG/KG/DAY
			100 MG/KG/DAY	300 MG/KG/DAY		
<hr/>						
TOTAL BUN (mg/dL)						
WEEK	3	MEAN	0.2	0.1**	0.1**	0.1**
		S.D.	0.04	0.00	0.00	0.00
		N	5	5	5	5
WEEK	13	MEAN	0.2	0.2	0.2	0.2
		S.D.	0.05	0.07	0.05	0.07
		N	10	10	10	9
WEEK	17	MEAN	0.2	0.2	0.2	0.1
		S.D.	0.04	0.05	0.00	0.04
		N	5	5	5	5
<hr/>						
UREA NITROGEN (mg/dL)						
WEEK	3	MEAN	13.0	12.1	11.4	12.4
		S.D.	2.39	1.61	1.39	2.77
		N	5	5	5	5
WEEK	13	MEAN	12.6	13.1	12.7	12.6
		S.D.	1.31	0.81	1.28	1.55
		N	10	10	10	9
WEEK	17	MEAN	15.7	14.7	13.4	14.3
		S.D.	2.06	2.09	1.57	1.46
		N	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER,  
 mEq/L = milliequivalents/Liter      g/dL = GRAMS/DECILITER,      mg/dL = MILLIGRAMS/DECILITER,

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS			GROUP:			0 MG/KG/DAY			M A L E			300 MG/KG/DAY			1000 MG/KG/DAY		
CREATININE	WEEK	3	MEAN	(mg/dL)		0.2	0.2	0.2		0.2	0.2		0.2		0.2		
			S.D.			0.09	0.09	0.09		0.04	0.04		0.04		0.04		
			N			5	5	5		5	5		5		5		
	WEEK	13	MEAN			0.3	0.3	0.3		0.3	0.3		0.3		0.3		
			S.D.			0.08	0.08	0.05		0.05	0.05		0.05		0.05		
			N			10	10	10		10	10		10		10		
	WEEK	17	MEAN			0.4	0.4	0.4		0.4	0.4		0.4		0.4		
			S.D.			0.09	0.09	0.05		0.05	0.05		0.05		0.05		
			N			5	5	5		5	5		5		5		
ALKALINEPHOS/TSE	WEEK	3	MEAN	(U/L)		202.	202.	185.		204.	204.		172.		172.		
			S.D.			16.1	16.1	44.9		45.5	45.5		21.7		21.7		
			N			5	5	5		5	5		5		5		
	WEEK	13	MEAN			103.	103.	87.		97.	97.		87.		87.		
			S.D.			21.5	21.5	11.3		20.1	20.1		17.6		17.6		
			N			10	10	10		10	10		9		9		
	WEEK	17	MEAN			81.	81.	83.		85.	85.		86.		86.		
			S.D.			26.2	26.2	14.6		13.1	13.1		5.8		5.8		
			N			5	5	5		5	5		5		5		

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER,  
mEq/L = milliequivalents/Liter mg/dL = MILLIGRAMS/DECILITER,

None significantly different from control group

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
			M	A	L	E	M	A	L	E	
<b>ALANINE TRANSFER (U/L)</b>											
WEEK	3	MEAN	31.		25.		28.		26.		
		S.D.	5.6		4.5		3.0		4.9		
		N	5		5		5		5		
WEEK	13	MEAN	40.		31.		40.		33.		
		S.D.	12.8		4.8		12.0		6.0		
		N	10		10		10		9		
WEEK	17	MEAN	94.		46.		36.		37.		
		S.D.	113.1		12.4		12.1		4.2		
		N	5		5		5		5		
<b>ASPARTATE TRANSFER (U/L)</b>											
WEEK	3	MEAN	80.		83.		85.		74.		
		S.D.	16.8		14.1		18.6		6.1		
		N	5		5		5		5		
WEEK	13	MEAN	89.		74.		75.		67.		
		S.D.	21.9		16.4		16.9		10.9		
		N	10		10		10		9		
WEEK	17	MEAN	209.		126.		105.		107.		
		S.D.	174.3		44.4		22.5		25.5		
		N	5		5		5		5		

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER,  
mEq/L = milliequivalents/Liter

None significantly different from control group

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
			M	A	L	E	M	A	L	E	
<b>GLUTAMYLTRANSFER (U/L)</b>											
WEEK	3	MEAN	0.		0.		0.		0.		1.
		S.D.	0.4		0.5		0.4		0.5		0.9
		N	5		5		5		5		5
WEEK	13	MEAN	0.		0.		0.		0.		1. **
		S.D.	0.0		0.4		0.7		1.0		1.2
		N	10		10		9		10		9
WEEK	17	MEAN	0.		0.		0.		0.		0.
		S.D.	0.0		0.0		0.0		0.0		0.0
		N	5		5		5		5		5
<b>GLUCOSE (mg/dL)</b>											
WEEK	3	MEAN	130.		114.		100. **		114.		
		S.D.	15.5		11.3		18.3		6.9		
		N	5		5		5		5		
WEEK	13	MEAN	131.		133.		137.		130.		
		S.D.	27.6		22.1		9.9		14.5		
		N	10		10		10		9		
WEEK	17	MEAN	156.		137.		142.		149.		
		S.D.	27.0		6.7		8.7		9.5		
		N	5		5		5		5		

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mEq/L = milliequivalents/Liter

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
			M	A	L	E	M	A	L	E	
<b>CHOLESTEROL (mg/dL)</b>											
WEEK	3	MEAN	46.				50.				
		S.D.	8.0				5				
		N	5								
WEEK	13	MEAN	56.				50.				
		S.D.	8.1				7.1				
		N	10				10				
WEEK	17	MEAN	77.				66.				
		S.D.	6.3				5.5				
		N	5								
<b>CALCIUM (mg/dL)</b>											
WEEK	3	MEAN	9.7				10.1				
		S.D.	0.48				0.26				
		N	5				5				
WEEK	13	MEAN	9.6				9.9				
		S.D.	0.50				0.40				
		N	10				10				
WEEK	17	MEAN	9.8				9.8				
		S.D.	0.21				0.14				
		N	5				5				

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 mEq/L = milliEquivalents/Liter mg/dL = MILLIGRAMS/DECILITER,

None significantly different from control group

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS GROUP:			0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY
CHLORIDE (mEq/L)					M A L E	
WEEK	3	MEAN	99.	101.	102.	110.**
		S.D.	2.2	0.8	1.7	1.3
		N	5	5	5	5
WEEK	13	MEAN	99.	104.**	107.**	114.**
		S.D.	3.2	2.7	2.8	2.3
		N	10	10	10	9
WEEK	17	MEAN	100.	101.	101.	102.
		S.D.	1.8	1.3	1.2	1.0
		N	5	5	5	5
PHOSPHORUS (mg/dL)						
WEEK	3	MEAN	8.9	9.2	8.9	9.2
		S.D.	0.25	0.36	0.29	0.29
		N	5	5	5	5
WEEK	13	MEAN	6.5	6.5	6.3	6.5
		S.D.	0.76	0.42	0.77	0.64
		N	10	10	10	9
WEEK	17	MEAN	7.2	7.2	7.3	6.9
		S.D.	0.72	0.54	0.51	0.48
		N	5	5	5	5

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TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E			M A L E			M A L E		M A L E	
<b>POTASSIUM (mEq/L)</b>													
WEEK	3	MEAN	5.39		5.65		5.51		5.85				
		S.D.	0.431		0.227		0.177		0.766				
		N	5		5		5		5				
WEEK	13	MEAN	5.40		5.19		5.08		5.28				
		S.D.	0.483		0.581		0.344		0.496				
		N	10		10		10		9				
WEEK	17	MEAN	5.62		5.88		5.85		5.42				
		S.D.	0.065		0.331		0.344		0.402				
		N	5		5		5		5				
<b>SODIUM (mEq/L)</b>													
WEEK	3	MEAN	141.		141.		142.		142.				
		S.D.	0.5		0.4		0.8		1.6				
		N	5		5		5		5				
WEEK	13	MEAN	142.		142.		143.		143.				
		S.D.	1.2		1.5		1.9		1.5				
		N	10		10		10		9				
WEEK	17	MEAN	143.		143.		144.		143.				
		S.D.	1.2		2.1		1.1		1.3				
		N	5		5		5		5				

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 mEq/L = milliEquivalents/Liter mg/dL = MILLIGRAMS/DECILITER,

None significantly different from control group

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
ALBUMIN (g/dL)													
WEEK	3	MEAN	4.8	5.1	4.8	5.2	5.1	4.8	5.1	5.6	5.6	5.7	5.2
		S.D.	0.22	0.29	0.22	0.56	0.29	0.38	0.29	0.59	0.59	0.29	0.62
		N	5	5	5	10	5	5	10	10	10	10	5
WEEK	13	MEAN	5.2	5.6	5.2	5.6	5.6	5.6	5.6	5.6	5.6	5.7	5.7
		S.D.	0.56	0.45	0.56	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.29
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	5.2	4.8	5.2	4.8	4.8	5.0	5.0	5.0	5.0	5.2	5.2
		S.D.	0.36	0.55	0.36	0.55	0.55	0.38	0.38	0.38	0.38	0.34	0.34
		N	5	5	5	5	5	5	5	5	5	5	5
TOTAL PROTEIN (g/dL)													
WEEK	3	MEAN	6.7	7.2	6.7	7.2	7.2	6.9	6.9	7.4	7.4	7.4	7.4
		S.D.	0.45	0.24	0.45	0.24	0.24	0.22	0.22	0.22	0.22	0.22	0.74
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	7.3	7.9*	7.3	7.9*	7.9*	8.1**	8.1**	8.3**	8.3**	8.3**	8.3**
		S.D.	0.46	0.62	0.46	0.62	0.62	0.55	0.55	0.48	0.48	0.48	0.48
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	7.7	7.4	7.7	7.4	7.4	7.8	7.8	7.8	7.8	7.8	7.8
		S.D.	0.37	0.34	0.37	0.34	0.34	0.81	0.81	0.81	0.81	0.81	0.81
		N	5	5	5	5	5	5	5	5	5	5	5

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mEq/L = milliEquivalents/Liter

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
GLOBULIN (g/dL)													
WEEK	3	MEAN	1.8	2.2	2.1	2.1	2.2	2.4*	2.4*	2.4*	2.4	2.4	2.4
		S.D.	0.30	0.21	0.23	0.21	0.21	0.18	0.18	0.18	0.18	0.18	0.18
		N	5	5	5	5	5	10	10	10	10	10	10
WEEK	13	MEAN	2.1	2.3	2.3	2.3	2.3	2.4*	2.4*	2.4*	2.4*	2.4*	2.4*
		S.D.	0.23	0.31	0.31	0.31	0.31	0.18	0.18	0.18	0.18	0.18	0.18
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	2.5	2.6	2.6	2.6	2.6	2.9	2.9	2.9	2.9	2.9	2.9
		S.D.	0.30	0.30	0.30	0.30	0.30	0.44	0.44	0.44	0.44	0.44	0.44
		N	5	5	5	5	5	5	5	5	5	5	5
A/G RATIO													
WEEK	3	MEAN	2.68	2.37	2.33	2.33	2.37	2.42	2.42	2.42	2.42	2.42	2.42
		S.D.	0.381	0.334	0.409	0.409	0.334	0.264	0.264	0.264	0.264	0.264	0.264
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	2.55	2.51	2.34	2.34	2.51	2.32	2.32	2.32	2.32	2.32	2.32
		S.D.	0.588	0.317	0.338	0.338	0.317	0.353	0.353	0.353	0.353	0.353	0.353
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	2.14	1.87	1.74	1.74	1.87	2.05	2.05	2.05	2.05	2.05	2.05
		S.D.	0.326	0.376	0.144	0.144	0.376	0.240	0.240	0.240	0.240	0.240	0.240
		N	5	5	5	5	5	5	5	5	5	5	5

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mEq/L = milliequivalents/Liter

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
TOTAL BUN (mg/dL)													
WEEK	3	MEAN	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1
		S.D.	0.04	0.04	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.00
		N	5	5	5	5	5	10	10	10	10	10	5
WEEK	13	MEAN	0.2	0.2	0.2	0.2	0.2	0.21	0.21	0.21	0.21	0.21	0.2
		S.D.	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.06
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	0.2	0.2	0.2	0.2	0.2	0.12	0.12	0.12	0.12	0.12	0.1
		S.D.	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		N	5	5	5	5	5	5	5	5	5	5	5
UREA NITROGEN (mg/dL)													
WEEK	3	MEAN	15.3	14.9	13.1	12.1*	12.1*	1.68	1.53	1.49	1.49	1.49	1.19
		S.D.	1.68	1.68	1.53	1.53	1.53	5	5	5	5	5	5
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	16.6	15.6	14.1	15.5	15.5	2.34	2.78	3.49	3.49	3.49	3.16
		S.D.	2.34	2.34	2.78	2.78	2.78	10	10	10	10	10	10
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	16.3	16.0	17.1	16.5	16.5	2.33	4.53	2.34	2.34	2.34	2.83
		S.D.	2.33	2.33	4.53	4.53	4.53	5	5	5	5	5	5
		N	5	5	5	5	5	5	5	5	5	5	5

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TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
CREATININE (mg/dL)													
WEEK	3	MEAN	0.2	0.3	0.2	0.2	0.2	0.05	0.05	0.05	0.05	0.04	0.2
		S.D.	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	0.3	0.4	0.4	0.3	0.3	0.07	0.07	0.07	0.07	0.07	0.4
		S.D.	0.07	0.07	0.07	0.07	0.07	0.10	0.10	0.10	0.10	0.10	0.13
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	0.4	0.4	0.4	0.4	0.4	0.05	0.05	0.05	0.05	0.05	0.4
		S.D.	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		N	5	5	5	5	5	5	5	5	5	5	5
ALKALINEPHOS'TSE (U/L)													
WEEK	3	MEAN	118.	105.	105.	107.	107.	25.8	15.2	15.2	10.7.	10.7.	99.
		S.D.	25.8	25.5	25.5	21.5	21.5	5	5	5	5	5	20.0
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	58.	38.**	38.**	39.**	39.**	19.4	10.7	10.7	10.7	10.7	34.**
		S.D.	10	10	10	10	10	10	10	10	10	10	11.1
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	43.	35.	35.	41.	41.	15.4	7.5	7.5	10.2	10.2	36.
		S.D.	15.4	15.4	15.4	15.4	15.4	5	5	5	5	5	6.2
		N	5	5	5	5	5	5	5	5	5	5	5

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TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
<b>ALANINE TRANSFER (U/L)</b>													
WEEK	3	MEAN	26.	25.				27.					
		S.D.	3.6	5				5.0					
		N	5		5			5					
WEEK	13	MEAN	28.										
		S.D.	4.9										
		N	10										
WEEK	17	MEAN	41.										
		S.D.	12.7										
		N	5										
<b>ASPARTATE TRANSFER (U/L)</b>													
WEEK	3	MEAN	109.										
		S.D.	13.0										
		N	5										
WEEK	13	MEAN	83.										
		S.D.	17.6										
		N	10										
WEEK	17	MEAN	101.										
		S.D.	21.7										
		N	5										

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\*\* = Significantly different from the control group at 0.01 using Dunnett's test

ANALYSIS	GROUP:	0 MG/KG/DAY					100 MG/KG/DAY					300 MG/KG/DAY					1000 MG/KG/DAY				
		-F	E	M	A	L	E	-F	E	M	A	L	E	-F	E	M	A	L	E		
<b>GLUTAMYLTRANSFER (U/L)</b>																					
WEEK	3	MEAN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
		S.D.	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
	N		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
WEEK	13	MEAN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
		S.D.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	N		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
WEEK	17	MEAN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
		S.D.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	N		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
<b>GLUCOSE (mg/dL)</b>																					
WEEK	3	MEAN	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.	110.		
		S.D.	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4		
	N		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
WEEK	13	MEAN	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.		
		S.D.	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4		
	N		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
WEEK	17	MEAN	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.	127.		
		S.D.	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3		
	N		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		

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TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
CHOLESTEROL	(mg/dL)												
WEEK	3	MEAN	57.	63.	62.	67.							
		S.D.	20.8	15.4	15.4	14.4							
		N	5	5	5	5							
WEEK	13	MEAN	63.	77.	76.	68.							
		S.D.	17.8	16.1	17.6	15.3							
		N	10	10	10	10							
WEEK	17	MEAN	81.	75.	86.	92.							
		S.D.	8.3	13.9	36.2	24.1							
		N	5	5	5	5							
CALCIUM	(mg/dL)												
WEEK	3	MEAN	9.5	10.1**	9.8	10.3**							
		S.D.	0.16	0.23	0.15	0.52							
		N	5	5	5	5							
WEEK	13	MEAN	9.8	10.2	10.5*	10.4*							
		S.D.	0.37	0.54	0.70	0.47							
		N	10	10	10	10							
WEEK	17	MEAN	10.2	9.9	10.0	10.4							
		S.D.	0.23	0.37	0.35	0.55							
		N	5	5	5	5							

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER,  
mEq/L = milliequivalents/Liter

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM CHEMISTRY VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
CHLORIDE (mEq/L)													
WEEK	3	MEAN	99.					102.					
		S.D.	1.0					1.1					
		N	5					5					
WEEK	13	MEAN	101.					104.**					
		S.D.	2.2					2.5					
		N	10					10					
WEEK	17	MEAN	103.					103.					
		S.D.	2.6					1.7					
		N	5					5					
PHOSPHORUS (mg/dL)													
WEEK	3	MEAN	7.5					7.2					
		S.D.	0.85					0.43					
		N	5					5					
WEEK	13	MEAN	5.6					5.4					
		S.D.	0.87					0.57					
		N	10					10					
WEEK	17	MEAN	5.1					6.3					
		S.D.	0.81					1.64					
		N	5					5					

U/L = INTERNATIONAL UNIT/LITER,  
mEq/L = milliequivalents/Liter      g/dL = GRAMS/DECILITER,      mg/dL = MILLIGRAMS/DECILITER,

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 45  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 SERUM CHEMISTRY VALUES - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
<b>POTASSIUM (mEq/L)</b>													
WEEK	3	MEAN	5.40	4.81	5.64	5.47		0.689	0.365	0.630	0.597		
		S.D.	0.689	0.365	0.630	0.597		5	5	5	5		
	N		5	5	5	5							
WEEK	13	MEAN	5.05	5.16	5.14	5.16		0.410	0.838	0.452	0.579		
		S.D.	0.410	0.838	0.452	0.579		10	10	10	10		
	N		10	10	10	10							
WEEK	17	MEAN	4.99	5.71	5.23	5.16		0.405	0.662	0.690	0.317		
		S.D.	0.405	0.662	0.690	0.317		5	5	5	5		
	N		5	5	5	5							
<b>SODIUM (mEq/L)</b>													
WEEK	3	MEAN	140.	140.	140.	141.		1.5	1.5	1.6	1.9		
		S.D.	1.5	1.5	1.5	1.5		5	5	5	5		
	N		5	5	5	5							
WEEK	13	MEAN	142.	141.	140.	141.		1.5	1.8	2.3	2.0		
		S.D.	1.5	1.8	2.3	2.0		10	10	10	10		
	N		10	10	10	10							
WEEK	17	MEAN	143.	142.	142.	143.		1.9	1.3	0.8	1.3		
		S.D.	1.9	1.3	0.8	1.3		5	5	5	5		
	N		5	5	5	5							

U/L = INTERNATIONAL UNIT/LITER,  
 g/dL = GRAMS/DECILITER,  
 mg/dL = MILLIGRAMS/DECILITER,  
 mEq/L = milliequivalents/Liter

None significantly different from control group

PCPSv4.04  
 10/27/2000  
 R:07/18/2001

TABLE 46  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 URINE QUANTITATIVE PARAMETERS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E	M	A	L	E	M	A	L	E
SPECIFIC GRAVITY													
WEEK	3	MEAN	1.029	0.0092	5	1.023	0.0070	5	1.026	0.0091	5	1.028	0.0159
		S.D.											
	N												
WEEK	13	MEAN	1.047	0.0190	10	1.043	0.0247	10	1.027	0.0189	10	1.038	0.0227
		S.D.											
	N												
WEEK	17	MEAN	1.047	0.0177	5	1.056	0.0182	5	1.058	0.0273	5	1.032	0.0214
		S.D.											
	N												
PH													
WEEK	3	MEAN	5.8	0.27	5	6.2	0.27	5	6.2	0.27	5	6.1	0.42
		S.D.											
	N												
WEEK	13	MEAN	6.1	0.55	10	6.2	0.48	10	6.4	0.52	10	5.9	0.63
		S.D.											
	N												
WEEK	17	MEAN	6.3	0.27	5	6.0	0.35	5	6.0	0.50	5	6.1	0.42
		S.D.											
	N												

None significantly different from control group

TABLE 46  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
URINE QUANTITATIVE PARAMETERS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E	M	A	L	E	M	A	L	E
<b>UROBILINOGEN (mg/dL)</b>													
WEEK	3	MEAN	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		S.D.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		S.D.	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		S.D.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		N	5	5	5	5	5	5	5	5	5	5	5
<b>TOTAL VOLUME (mL)</b>													
WEEK	3	MEAN	8.7	8.7	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
		S.D.	4.24	4.24	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
		S.D.	2.90	2.90	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	5.9	5.9	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
		S.D.	2.13	2.13	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
		N	5	5	5	5	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,    mL = MILLILITERS

\* = Significantly different from the control group at 0.05 using Dunnett's test

TABLE 46  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 URINE QUANTITATIVE PARAMETERS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
SPECIFIC GRAVITY													
WEEK	3	MEAN	1.033		1.029			1.030		1.035			
		S.D.	0.0100		0.0160			0.0030		0.0255			
		N	5		5			5		5			
WEEK	13	MEAN	1.035		1.040			1.036		1.031			
		S.D.	0.0175		0.0177			0.0126		0.0211			
		N	10		10			10		10			
WEEK	17	MEAN	1.039		1.037			1.046		1.047			
		S.D.	0.0238		0.0158			0.0253		0.0199			
		N	5		5			5		5			
PH													
WEEK	3	MEAN	5.8		5.5			5.6		5.6			
		S.D.	0.57		0.50			0.42		0.42			
		N	5		5			5		5			
WEEK	13	MEAN	5.8		5.5			5.5		5.8			
		S.D.	0.42		0.44			0.55		0.68			
		N	10		10			10		10			
WEEK	17	MEAN	5.2		5.8			5.7		5.4			
		S.D.	0.27		0.45			0.27		0.42			
		N	5		5			5		5			

None significantly different from control group

TABLE 46  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 URINE QUANTITATIVE PARAMETERS - SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		-F	E	M	A	L	E	-F	E	M	A	L	E
<b>UROBILINOGEN (mg/dL)</b>													
WEEK	3	MEAN	0.2	0.4	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.4
		S.D.	0.00	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.36
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		S.D.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		S.D.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		N	5	5	5	5	5	5	5	5	5	5	5
<b>TOTAL VOLUME (mL)</b>													
WEEK	3	MEAN	6.4	8.4	6.4	8.4	6.4	6.2	6.2	6.2	6.2	6.2	9.1
		S.D.	3.15	6.11	3.15	6.11	3.15	2.95	2.95	2.95	2.95	2.95	7.27
		N	5	5	5	5	5	5	5	5	5	5	5
WEEK	13	MEAN	5.9	5.6	5.9	5.6	5.9	6.7	6.7	6.7	6.7	6.7	12.2
		S.D.	2.95	2.68	2.95	2.68	2.95	4.50	4.50	4.50	4.50	4.50	9.94
		N	10	10	10	10	10	10	10	10	10	10	10
WEEK	17	MEAN	8.8	4.6	8.8	4.6	8.8	5.5	5.5	5.5	5.5	5.5	4.6
		S.D.	11.93	1.29	11.93	1.29	11.93	4.83	4.83	4.83	4.83	4.83	2.04
		N	5	5	5	5	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

None significantly different from control group

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 11/17/2000  
 R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 47  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SERUM HORMONE VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
					M	A	L	E					
TSH (ng/ml)													
WEEK	3	MEAN	1.91		4.53				4.17		2.85		
		S.D.	1.444		4.328				1.352		1.932		
		N	4		5				3		5		
WEEK	13	MEAN	0.46		3.29				2.65		3.88		
		S.D.	0.420		3.859				2.098		2.981		
		N	5		8				10		9		
WEEK	17	MEAN	1.50		0.47				0.64		1.27		
		S.D.	0.915		0.458				0.583		0.780		
		N	5		4				5		5		
TOTAL T <sub>3</sub> (ng/dL)													
WEEK	3	MEAN	70.28		90.28				65.40		75.16		
		S.D.	8.474		21.783				14.954		16.259		
		N	5		5				5		5		
WEEK	13	MEAN	64.36		58.78				58.96		64.23		
		S.D.	9.554		13.007				13.172		9.549		
		N	10		10				10		9		
WEEK	17	MEAN	64.46		78.68				71.56		82.44		
		S.D.	16.745		13.310				10.472		23.868		
		N	5		5				5		5		

ug/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

None significantly different from control group

TABLE 47  
A 90-DAY ORAL TOXICITY STUDY OF HBED IN RATS  
SERUM HORMONE VALUES -- SUMMARY OF MEANS

ANALYSIS		GROUP:			0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY
		M	A	E				
TOTAL T4	( $\mu$ G/DL)							
WEEK	3	MEAN	7.84		7.42		7.02	
		S.D.	2.429		1.165		1.698	
		N	5		5		5	
WEEK	13	MEAN	7.87		6.34**		6.28**	
		S.D.	1.223		1.222		1.033	
		N	10		10		10	
WEEK	17	MEAN	6.42		6.56		7.04	
		S.D.	1.139		1.305		1.307	
		N	5		5		5	

$\mu$ G/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,      ng/dL = NANOGRAMS/DECILITER

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 4.7  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
SERUM HORMONE VALUES -- SUMMARY OF MEANS

ANALYSIS	GROUP:	P E M A L E -			F E M A L E -			1000 MG/KG/DAY		
		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
TSH (ng/ml)										
WEEK	3	MEAN	1.08	1.31	1.87	1.83				
		S.D.	0.000	0.535	2.511	1.333				
		N	1	3	4	4				
WEEK	13	MEAN	0.46	1.42	3.96	2.43				
		S.D.	0.311	1.110	5.145	1.735				
		N	5	8	9	10				
WEEK	17	MEAN	0.38	0.37	0.26	0.47				
		S.D.	0.438	0.137	0.121	0.222				
		N	5	5	5	5				
TOTAL T <sub>3</sub> (ng/dL)										
WEEK	3	MEAN	76.28	71.40	77.24	80.94				
		S.D.	14.358	11.807	4.895	11.968				
		N	5	5	5	5				
WEEK	13	MEAN	73.40	70.78	67.02	70.31				
		S.D.	14.967	19.176	17.215	16.783				
		N	10	10	10	9				
WEEK	17	MEAN	73.54	73.00	77.74	86.36				
		S.D.	8.486	9.605	24.400	26.527				
		N	5	5	5	5				

μg/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

None significantly different from control group

TABLE 4.7  
A 90-DAY ORAL TOXICITY STUDY OF HBED IN RATS  
SERUM HORMONE VALUES -- SUMMARY OF MEANS

ANALYSIS GROUP:				0 MG/KG/DAY	FEMALE -	300 MG/KG/DAY	1000 MG/KG/DAY
TOTAL T4 (uG/dL)							
WEEK 3	MEAN	5.95		6.06		5.76	
	S.D.	1.462		1.210		1.305	
	N	4		5		5	
WEEK 13	MEAN	5.43		4.96		4.53*	
	S.D.	0.860		0.624		0.876	
	N	10		10		10	
WEEK 17	MEAN	3.20		3.64		3.64	
	S.D.	1.049		0.581		0.467	
	N	5		5		5	

uG/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,      ng/dL = NANOGRAMS/DECILITER

\* = Significantly different from the control group at 0.05 using Dunnett's test

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11/17/2000  
R : 07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 48 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
OPHTHALMOLOGICAL EXAMINATION FINDINGS - SUMMARY INCIDENCE

NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED	EXAM 1 (WEEK -1)	GROUP:				M A L E				F E M A L E			
			1	2	3	4	1	2	3	4	1	2	3	4
-NO OCULAR LESIONS - BILATERAL			15	15	15	15					15	15	15	15
-CORNEAL CRYSTALS - BILATERAL			10	9	9	6					15	15	15	15
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY											

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PROJECT NO.: WIL-186012  
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TABLE 49 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
OPHTHALMOLOGICAL EXAMINATION FINDINGS - SUMMARY INCIDENCE

NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED	GROUP:	M A L E				F E M A L E			
			1	2	3	4	1	2	3	4
-NO OCULAR LESIONS - BILATERAL			15	15	15	15	15	15	15	15
-CORNEAL CRYSTALS - BILATERAL			10	12	11	7	5	3	4	7
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY							

POPSIV4.0  
10/27/2000  
R:07/18/2001

PROJECT NO.: WIL-196012  
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TABLE 50 (WEEK 15 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
OPHTHALMOLOGICAL EXAMINATION FINDINGS - SUMMARY INCIDENCE

NUMBER OF ANIMALS IN DOSE GROUP	GROUP	M A L E				F E M A L E			
		1	2	3	4	1	2	3	4
NUMBER OF ANIMALS EXAMINED	3 (WEEK 15)	15	15	15	15	15	15	15	15
-NO OCULAR LESIONS - BILATERAL		5	5	5	5	5	5	5	5
-CORNEAL CRYSTALS - BILATERAL		3	5	5	5	5	5	3	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			0	0	2	0

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 51  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ESTROUS CYCLE DATA - SUMMARY OF MEANS

GROUP:	MEAN LENGTH OF ESTROUS CYCLE (IN DAYS)	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		F	E	M	A	L	E	F	E	M	A	L	E
		4.5	4.7			4.7		5.3		5.2			
		0.57				1.47		1.95		1.08			
		N				1.3		1.3		1.1			

NONE SIGNIFICANTLY DIFFERENT FROM CONTROL GROUP USING DUNNETT'S TEST

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08/01/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 52 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROSS NECROPSY OBSERVATIONS INCIDENCE SUMMARY

FOUND DEAD OR EUTHANIZED MORIBUND OR IN EXTREMIS

NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED	FOUND DEAD OR EUTHANIZED MORIBUND OR IN EXTREMIS			
		GROUP:	M A L E	F E M A L E	F E M A L E
15	15	1	2	3	4
15	15	15	15	15	15
0	0	0	1	0	0
				15	15
				0	0
				0	0

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

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11/16/2000  
R:07/18/2001

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 53 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROSS NECROPSY OBSERVATIONS INCIDENCE SUMMARY

SCHEDULED NECROPSY

NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED WEEK 13	GROUP :				SCHEDULED NECROPSY			
		1	2	3	4	1	2	3	4
EPIDIDYMIDES		1	0	0	0	NA	NA	NA	NA
-SMALL									
HARDERIAN GLANDS		0	0	0	0	1	0	1	0
-DARK RED AREA (S)									
KIDNEYS		0	0	0	0	0	0	1	1
-WHITE AREA (S)									
-DEPRESSED AREA (S)		0	0	1	1	1	0	0	2
-DARK RED AREA (S)		0	0	0	0	1	0	0	0
LIVER		0	0	0	1	0	0	0	0
-MASS									
LUNGS		0	0	1					
-DARK RED AREA (S)		0	0	1		0	0	0	1
-DARK RED		1	0	1		0	0	0	0
-MOTTLED		0	0	1		0	0	0	0
-WHITE AREA (S)		0	1	0		0	0	0	2
OVARIES		NA	NA	NA	NA	0	0	1	0
-WHITE AREA (S)									
SKIN		NA	NA	NA	NA	0	0	1	0
-RED MATTING									
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY						

NA = NOT APPLICABLE

TABLE 53 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 GROSS NECROPSY OBSERVATIONS INCIDENCE SUMMARY

SCHEDULED NECROPSY									
		GROUP:				F E M A L E			
		1	2	3	4	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13		10	10	10	9	10	10	10	10
SKIN	- CONTINUED								
-MASS		0	2	0	2	0	0	0	0
-BROWN MATTING		0	0	1	0	0	0	0	1
-CLEAR MATTING		0	0	1	0	0	0	0	0
LYMPH NODE, MAND									
-ENLARGED		3	0	0	0	0	0	0	0
-REDDENED		1	0	0	0	0	0	0	0
TESTES									
-SOFT		1	0	0	0	NA	NA	NA	NA
-SMALL		1	0	0	0	NA	NA	NA	NA
UTERUS	-CLEAR FLUID CONTENTS								
		NA	NA	NA	NA	1	0	0	0
TAIL									
-BROWN MATTING		1	0	0	0	0	0	0	0
EAR (S)									
-SWOLLEN		0	0	0	0	0	0	2	0
TEETH	-MALALIGNED								
		1	0	0	0	0	0	0	0
NO SIGNIFICANT CHANGES OBSERVED - ALL EXAMINED TISSUES									
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY						
NA = NOT APPLICABLE									

TABLE 54 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROSS NECROPSY OBSERVATIONS INCIDENCE SUMMARY

		SCHEDULED NECROPSY				SCHEDULED NECROPSY			
		GROUP:				GROUP:			
		1 2 3 4				1 2 3 4			
		M A L E				F E M A L E			
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17		5	5	5	5	5	5	5	5
KIDNEYS									
-WHITE AREA (S)		0	0	1	0	0	0	0	0
-DEPRESSED AREA (S)		1	0	0	1	0	0	1	0
-DARK RED AREA (S)		0	0	0	1	1	0	0	0
-PALE		0	0	0	0	0	0	1	0
LIVER									
-WHITE AREA (S)		0	0	0	0	0	0	1	0
LUNGS									
-DARK RED AREA (S)		2	0	1	1	0	0	0	0
-WHITE AREA (S)		0	0	0	1	1	0	0	0
SEMINAL VESICLES									
-SMALL		0	1	0	0	NA	NA	NA	NA
SKIN									
-RED MATTING		0	0	0	0	0	1	0	0
-MASS		0	0	0	1	0	0	0	0
RT TESTIS									
-SMALL		0	1	0	0	NA	NA	NA	NA
UTERUS									
-CLEAR FLUID CONTENTS		NA	NA	NA	NA	1	0	0	0
1- 0 MG/KG/DAY		2-	100 MG/KG/DAY	3-	300 MG/KG/DAY	4-	1000 MG/KG/DAY		
NA = NOT APPLICABLE									

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 54 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROSS NECROPSY OBSERVATIONS INCIDENCE SUMMARY

SCHEDULED NECROPSY						
		M A L E			F E M A L E	
GROUP:		1	2	3	4	1
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17		5	5	5	5	5
TEETH		0	0	1	0	0
-MALIGNED		0	0	1	0	0
-BROKEN						0
COAGULATING GL						0
-SMALL						0
NO SIGNIFICANT CHANGES OBSERVED - ALL EXAMINED TISSUES		3	4	3	1	4
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 55 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
BRAIN	2.05	0.098	10	2.07	0.058	10	2.02	0.079	10	1.99	0.072	9
LIVER	14.33	1.205	10	17.01*	2.313	10	17.17*	3.079	10	19.02**	2.770	9
KIDNEYS	3.50	0.375	10	3.58	0.323	10	3.61	0.482	10	3.38	0.233	9
HEART	1.63	0.134	10	1.57	0.100	10	1.62	0.156	10	1.48	0.157	9
SPLEEN	0.81	0.144	10	0.76	0.124	10	0.72	0.157	10	0.76	0.126	9

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR : CMA/BFRIP

TABLE 55 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
					M A L E							
PROSTATE	MEAN	0.95		0.99			1.12			1.25*		
	S.D.	0.185	10	0.223			0.204			0.231		
	N			10			10			9		
RT TESTIS	MEAN	1.61		1.63			1.64			1.58		
	S.D.	0.380	10	0.182			0.153			0.201		
	N			10			10			9		
LT TESTIS	MEAN	1.60		1.66			1.64			1.58		
	S.D.	0.391	10	0.156			0.149			0.179		
	N			10			10			9		
RT EPIDIDYMIS	MEAN	0.65		0.70			0.67			0.69		
	S.D.	0.201	10	0.034			0.069			0.057		
	N			10			10			9		
LT EPIDIDYMIS	MEAN	0.63		0.69			0.66			0.66		
	S.D.	0.128	10	0.057			0.101			0.054		
	N			10			10			9		

\* = Significantly different from the control group at 0.05 using Dunnett's test

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 55 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
				M A L E								
RT CAUDA EPID	MEAN	0.2864		0.3018			0.3014			0.3064		
	S.D.	0.07200		0.03272			0.04045			0.04989		
	N	10		10			10			9		
LT CAUDA EPID	MEAN	0.2840		0.3085			0.2967			0.2972		
	S.D.	0.06490		0.02720			0.04545			0.02992		
	N	10		10			10			9		
THYMUS GLAND	MEAN	0.3104		0.3049			0.2820			0.2588		
	S.D.	0.05002		0.05959			0.06160			0.04466		
	N	10		10			10			9		
ADRENAL GLANDS	MEAN	0.0556		0.0586			0.0536			0.0560		
	S.D.	0.00863		0.00442			0.00933			0.00684		
	N	10		10			10			9		
THYROIDS/ PARA	MEAN	0.0232		0.0278			0.0260			0.0234		
	S.D.	0.00527		0.00864			0.00625			0.00560		
	N	10		10			10			9		

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 55 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
BRAIN	1.86	0.101	10	1.84	0.055	10	1.86	0.097	10	1.83	0.080	10
LIVER	8.12	0.942	10	9.92*	1.261	10	10.60**	1.405	10	12.42**	1.638	10
KIDNEYS	2.09	0.258	10	1.99	0.223	10	2.07	0.240	10	2.05	0.239	10
HEART	1.10	0.180	10	1.06	0.134	10	1.08	0.118	10	1.07	0.130	10
SPLEEN	0.51	0.085	10	0.49	0.056	10	0.56	0.135	10	0.53	0.126	10

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 55 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY	100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY			
		F	E	M	A	L	E	F	E	M	A
UTERUS/CX	MEAN	0.81		0.64		0.67		0.62		0.62	
	S.D.	0.248		0.164		0.141		0.171		0.171	
	N	10		10		10		10		10	
OVARIES/OVIDUCTS	MEAN	0.1435		0.1297		0.1302		0.1478		0.1478	
	S.D.	0.02798		0.02638		0.02946		0.01940		0.01940	
	N	10		10		10		10		10	
THYMUS GLAND	MEAN	0.2491		0.2743		0.2701		0.2257		0.2257	
	S.D.	0.06446		0.03999		0.08724		0.05134		0.05134	
	N	10		10		10		10		10	
ADRENAL GLANDS	MEAN	0.0710		0.0721		0.0753		0.0698		0.0698	
	S.D.	0.00854		0.00988		0.01056		0.01147		0.01147	
	N	10		10		10		10		10	
THYROIDS/PARA	MEAN	0.0172		0.0196		0.0182		0.0197		0.0197	
	S.D.	0.00329		0.00475		0.00246		0.00379		0.00379	
	N	10		10		10		10		10	

- None significantly different from control group

POPRSTv4.04  
11/16/2000  
R:07/18/2001

TABLE 5.6 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
BRAIN	MEAN	1.97				2.07				2.05		1.97
	S.D.	0.135				0.084				0.076		0.121
	N	5				5				5		5
LIVER	MEAN	14.39				14.72				15.66		14.09
	S.D.	1.115				2.389				1.884		2.609
	N	5				5				5		5
KIDNEYS	MEAN	3.46				3.63				3.95		3.62
	S.D.	0.461				0.544				0.576		0.452
	N	5				5				5		5
HEART	MEAN	1.64				1.60				1.68		1.58
	S.D.	0.138				0.150				0.150		0.212
	N	5				5				5		5
SPLEEN	MEAN	0.64				0.75				0.81*		0.66
	S.D.	0.057				0.077				0.106		0.120
	N	5				5				5		5

\* = Significantly different from the control group at 0.05 using Dunnett's test

TABLE 5.6 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
PROSTATE	MEAN	1.21				0.85		1.07			1.08	
	S.D.	0.206				0.134		0.347			0.282	
	N	5				5		5			5	
RT TESTIS	MEAN	1.63				1.31		1.64			1.57	
	S.D.	0.141				0.629		0.167			0.128	
	N	5				5		5			5	
LT TESTIS	MEAN	1.56				1.50		1.66			1.57	
	S.D.	0.175				0.286		0.189			0.126	
	N	5				5		5			5	
RT EPIDIDYMIS	MEAN	0.71				0.59		0.73			0.69	
	S.D.	0.054				0.306		0.068			0.038	
	N	5				5		5			5	
LT EPIDIDYMIS	MEAN	0.69				0.69		0.72			0.69	
	S.D.	0.096				0.116		0.073			0.033	
	N	5				5		5			5	

None significantly different from control group

TABLE 56 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP :	M A L E			1000 MG/KG/DAY		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0.3244	0.3346	0.3079
RT CAUDA EPID	MEAN	0.3022	0.3133	0.3244	0.3346	0.3079
	S.D.	0.04267	0.04563	0.05561	0.05715	0.06518
	N	5	4	5	5	5
LT CAUDA EPID	MEAN	0.3084	0.3221	0.3346	0.3346	0.3079
	S.D.	0.04791	0.0734	0.05715	0.05715	0.06518
	N	5	5	5	5	5
THYMUS GLAND	MEAN	0.3090	0.2260	0.3012	0.2717	0.2717
	S.D.	0.07824	0.06157	0.07609	0.07609	0.07609
	N	5	5	5	5	5
ADRENAL GLANDS	MEAN	0.0656	0.0645	0.0645	0.0569	0.0544
	S.D.	0.01148	0.00775	0.00775	0.00647	0.01490
	N	5	5	5	5	5
THYROID/S/PARA	MEAN	0.0288	0.0307	0.0281	0.0280	0.0280
	S.D.	0.00306	0.00639	0.00579	0.00536	0.00536
	N	5	5	5	5	5

None significantly different from control group

TABLE 56 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	F E M A L E			M A L E			F E M A L E			M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
BRAIN	MEAN S.D. N	1.88 0.055 5	1.91 0.047 5	1.89 0.102 5	1.88 0.083 5							
LIVER	MEAN S.D. N	8.09 0.852 5	7.57 0.501 5	8.82 1.906 5	8.82 1.485 5							
KIDNEYS	MEAN S.D. N	1.96 0.175 5	1.82 0.170 5	2.11 0.351 5	2.10 0.348 5							
HEART	MEAN S.D. N	1.05 0.158 5	0.99 0.084 5	1.04 0.168 5	1.14 0.154 5							
SPLEEN	MEAN S.D. N	0.48 0.025 5	0.54 0.078 5	0.55 0.113 5	0.54 0.080 5							

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 56 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
ORGAN WEIGHTS (GRAMS) - SUMMARY OF MEANS

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	F	E	M	A	L	E	F	E	M	A	L	E
UTERUS/CX												
MEAN	0.78				0.56		0.73				0.72	
S.D.	0.322				0.133		0.168				0.220	
N	5				5		5				5	
OVARIES/OVIDUCTS												
MEAN	0.1248				0.1396		0.1419				0.1410	
S.D.	0.02616				0.01084		0.02952				0.01788	
N	5				5		5				5	
THYMUS GLAND												
MEAN	0.2618				0.2608		0.1857				0.2403	
S.D.	0.04894				0.03826		0.05552				0.07359	
N	5				5		5				5	
ADRENAL GLANDS												
MEAN	0.0659				0.0633		0.0700				0.0715	
S.D.	0.00635				0.01351		0.01464				0.00905	
N	5				5		5				5	
THYROIDS/PARA												
MEAN	0.0163				0.0204		0.0222*				0.0224*	
S.D.	0.00298				0.00398		0.00387				0.00214	
N	5				5		5				5	

\* = Significantly different from the control group at 0.05 using Dunnett's test

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	M	A	L	E	M	A	L	E	M	A	L	E
FINAL BODY WT (G)												
MEAN	529.				535.				537.			
S.D.	37.3				47.1				55.2			
N	10				10				10			
BRAIN												
MEAN	0.389				0.389				0.380			
S.D.	0.0376				0.0289				0.0393			
N	10				10				10			
LIVER												
MEAN	2.709				3.175**				3.183**			
S.D.	0.1193				0.2293				0.2653			
N	10				10				10			
KIDNEYS												
MEAN	0.663				0.672				0.674			
S.D.	0.0704				0.0518				0.0547			
N	10				10				10			
HEART												
MEAN	0.309				0.295				0.303			
S.D.	0.0247				0.0192				0.0199			
N	10				10				10			

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
SPLINEEN	MEAN	0.152		0.142			0.135		0.154			
	S.D.	0.0230		0.0241			0.0268		0.0183			
	N	10		10			10		9			
PROSTATE	MEAN	0.180		0.185			0.210		0.255**			
	S.D.	0.0304		0.0342			0.0367		0.0452			
	N	10		10			10		9			
RT TESTIS	MEAN	0.305		0.306			0.308		0.323			
	S.D.	0.0736		0.0402			0.0374		0.0486			
	N	10		10			10		10			
LT TESTIS	MEAN	0.302		0.313			0.308		0.324			
	S.D.	0.0754		0.0351			0.0360		0.0421			
	N	10		10			10		9			
RT EPIDIDYMIS	MEAN	0.122		0.132			0.126		0.142			
	S.D.	0.0394		0.0105			0.0126		0.0185			
	N	10		10			10		9			

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
			M A L E			M A L E			M A L E			M A L E
LT EPIDIDYMIS												
MEAN	0.120		0.130			0.124			0.135			
S.D.	0.0244		0.0135			0.0195			0.0137			
N	10		10			10			9			
RT CAUDA EPID												
MEAN	0.054		0.057			0.056			0.063			
S.D.	0.0135		0.0074			0.0069			0.0133			
N	10		10			10			9			
LT CAUDA EPID												
MEAN	0.053		0.058			0.056			0.061			
S.D.	0.0107		0.0066			0.0077			0.0068			
N	10		10			10			9			
THYMUS GLAND												
MEAN	0.059		0.057			0.053			0.053			
S.D.	0.0105		0.0120			0.0129			0.0093			
N	10		10			10			9			
ADRENAL GLANDS												
MEAN	0.011		0.011			0.010			0.011			
S.D.	0.0016		0.0007			0.0014			0.0010			
N	10		10			10			9			

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	M A L E			F E M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
THYROID/ PARA						
MEAN	0.005	0.005	0.005	0.005	0.005	0.005
S.D.	0.0012	0.0012	0.0016	0.0016	0.0013	0.0013
N	10	10	10	10	9	9

None significantly different from control group

PAGE 4  
WEEK 13

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

FINAL BODY WT (G)	GROUP:			F E M A L E			M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
MEAN	281.	277.	297.	289.	297.	289.	289.	289.	289.
S.D.	24.4	29.4	30.8	44.1	30.8	44.1	44.1	44.1	44.1
N	10	10	10	10	10	10	10	10	10
BRAIN	MEAN	0.663	0.670	0.633	0.646	0.633	0.646	0.646	0.646
	S.D.	0.0450	0.0662	0.0613	0.0663	0.0613	0.0663	0.0663	0.0663
	N	10	10	10	10	10	10	10	10
LIVER	MEAN	2.887	3.583**	3.578**	4.314**	3.578**	4.314**	4.314**	4.314**
	S.D.	0.2062	0.2734	0.3454	0.2859	0.3454	0.2859	0.2859	0.2859
	N	10	10	10	10	10	10	10	10
KIDNEYS	MEAN	0.744	0.719	0.701	0.715	0.701	0.715	0.715	0.715
	S.D.	0.0704	0.0570	0.0751	0.0709	0.0751	0.0709	0.0709	0.0709
	N	10	10	10	10	10	10	10	10
HEART	MEAN	0.390	0.383	0.364	0.372	0.383	0.372	0.372	0.372
	S.D.	0.0518	0.0371	0.0282	0.0304	0.0371	0.0282	0.0304	0.0304
	N	10	10	10	10	10	10	10	10

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	F	E	M	A	L	E	F	E	M	A	L	E
SPLEEN												
MEAN	0.181		0.178		0.189		0.184					
S.D.	0.0224		0.0156		0.0437		0.0477					
N	10		10		10		10					
UTERUS/CX												
MEAN	0.285		0.228		0.224		0.219					
S.D.	0.0745		0.0462		0.0424		0.0679					
N	10		10		10		10					
OVARIES/OVIDUCTS												
MEAN	0.051		0.047		0.045		0.052					
S.D.	0.0089		0.0091		0.0118		0.0108					
N	10		10		10		10					
THYMUS GLAND												
MEAN	0.088		0.100		0.091		0.079					
S.D.	0.0180		0.0203		0.0270		0.0182					
N	10		10		10		10					
ADRENAL GLANDS												
MEAN	0.025		0.026		0.026		0.025					
S.D.	0.0033		0.0027		0.0041		0.0063					
N	10		10		10		10					

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 57 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	F E M A L E			M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
<hr/>						
THYROIDS/ PARA						
MEAN	0.006	0.007	0.006			
S.D.	0.0012	0.0018	0.0012			
N	10	10	10			

None significantly different from control group

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 58 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	M A L E			FEMALE		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
FINAL BODY WT (G)						
MEAN	54.2	49.9	537.	49.6	55.8	71.8
S.D.	29.9	89.1	5	5	5	5
N	5	5	5	5	5	5
BRAIN	MEAN	0.365	0.424	0.385	0.402	
	S.D.	0.0340	0.0719	0.0482	0.0533	
	N	5	5	5	5	
LIVER	MEAN	2.652	2.959**	2.913*	2.830	
	S.D.	0.0609	0.1526	0.1494	0.1722	
	N	5	5	5	5	
KIDNEYS	MEAN	0.637	0.732*	0.732*	0.733*	
	S.D.	0.0561	0.0496	0.0473	0.0643	
	N	5	5	5	5	
HEART	MEAN	0.303	0.326	0.313	0.320	
	S.D.	0.0201	0.0389	0.0110	0.0248	
	N	5	5	5	5	

\* = Significantly different from the control group at 0.05 using Dunnett's test  
\*\* = Significantly different from the control group at 0.01 using Dunnett's test

TABLE 58 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY
		M A L E	M A L E	M A L E	M A L E
SPLINE	MEAN	0.119	0.152*	0.152*	0.133
	S.D.	0.0116	0.0204	0.0166	0.0245
	N	5	5	5	5
PROSTATE	MEAN	0.224	0.174	0.195	0.218
	S.D.	0.0361	0.0399	0.0522	0.0538
	N	5	5	5	5
RT TESTIS	MEAN	0.301	0.252	0.306	0.321
	S.D.	0.0304	0.1157	0.0276	0.0598
	N	5	5	5	5
LT TESTIS	MEAN	0.289	0.300	0.309	0.322
	S.D.	0.0305	0.0327	0.0301	0.0517
	N	5	5	5	5
RT EPIDIDYMIS	MEAN	0.132	0.113	0.137	0.142
	S.D.	0.0064	0.0585	0.0119	0.0172
	N	5	5	5	5

\* = Significantly different from the control group at 0.05 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 58 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
LT EPIDIDYMIS												
MEAN	0.128			0.140			0.135			0.141		
S.D.	0.0153			0.0147			0.0200			0.0146		
N	5			5			5			5		
RT CAUDA EPID												
MEAN	0.056			0.060			0.061			0.058		
S.D.	0.0059			0.0104			0.0086			0.0080		
N	5			4			5			5		
LT CAUDA EPID												
MEAN	0.057			0.064			0.063			0.063		
S.D.	0.0071			0.0079			0.0124			0.0094		
N	5			5			5			5		
THYMUS GLAND												
MEAN	0.058			0.045			0.056			0.055		
S.D.	0.0167			0.0092			0.0140			0.0117		
N	5			5			5			5		
ADRENAL GLANDS												
MEAN	0.012			0.013			0.011			0.011		
S.D.	0.0027			0.0035			0.0026			0.0026		
N	5			5			5			5		

None significantly different from control group

PROJECT NO.: WIL-1866012  
SPONSOR: CMA-BFRIP

TABLE 58 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	M A L E			F E M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
THYROIDS/ PARA						
MEAN	0.005	0.006	0.005	0.0008	0.0008	0.0006
S.D.	0.0008	0.0008	0.0011	0.0008	0.0008	0.0006
N	5	5	5	5	5	5

None significantly different from control group

PAGE 4  
WEEK 17

TABLE 58 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY					100 MG/KG/DAY					300 MG/KG/DAY					1000 MG/KG/DAY				
	F	E	M	A	L	E	F	E	M	A	L	E	F	E	M	A	L	E	F	
FINAL BODY WT (G)																				
MEAN	281.		273.		273.		283.													
S.D.	32.4		31.6		40.9		35.2													
N	5		5		5		5													
BRAIN	MEAN	0.676		0.705		0.701		0.673												
	S.D.	0.0707		0.0684		0.0879		0.0820												
	N	5		5		5		5												
LIVER	MEAN	2.888		2.808		3.209		3.213												
	S.D.	0.2220		0.3940		0.2806		0.1839												
	N	5		5		5		5												
KIDNEYS	MEAN	0.702		0.676		0.775		0.741												
	S.D.	0.0659		0.1213		0.0614		0.0522												
	N	5		5		5		5												
HEART	MEAN	0.372		0.364		0.382		0.402												
	S.D.	0.0301		0.0266		0.0217		0.0148												
	N	5		5		5		5												

None significantly different from control group

TABLE 58 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	F	E	M	A	L	E	F	E	M	A	L	E
SPLEEN												
MEAN	0.173		0.198		0.202		0.192		0.204		0.192	
S.D.	0.0224		0.0276		0.0240		0.0284		0.0240		0.0284	
N	5		5		5		5		5		5	
UTERUS/CX												
MEAN	0.288		0.204		0.276		0.255		0.276		0.255	
S.D.	0.1485		0.0314		0.0937		0.0729		0.0937		0.0729	
N	5		5		5		5		5		5	
OVARIES/OVIDUCTS												
MEAN	0.044		0.052		0.054		0.051		0.052		0.051	
S.D.	0.0085		0.0086		0.0165		0.0110		0.0086		0.0165	
N	5		5		5		5		5		5	
THYMUS GLAND												
MEAN	0.094		0.097		0.070		0.085		0.097		0.070	
S.D.	0.0228		0.0186		0.0244		0.0232		0.0186		0.0244	
N	5		5		5		5		5		5	
ADRENAL GLANDS												
MEAN	0.024		0.023		0.026		0.025		0.024		0.026	
S.D.	0.0040		0.0040		0.0054		0.0017		0.0040		0.0054	
N	5		5		5		5		5		5	

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 58 (WEEK 1-7 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	F	E	M	A	L	E	F	E	M	A	L	E
THYROID/PARA												
MEAN	0.006		0.007		0.008*		0.008*		0.008*		0.008*	
S.D.	0.0008		0.0015		0.0015		0.0015		0.0015		0.0010	
N	5		5		5		5		5		5	

\* = Significantly different from the control group at 0.05 using Dunnett's test

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BRIP

TABLE 59 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY
		M	A	L	E
BRAIN WT (GRAMS)					
MEAN	2.05	2.07	2.02	1.99	
S.D.	0.098	0.058	0.079	0.072	
N	10	10	10	9	
LIVER					
MEAN	701.896	821.310*	846.326*	952.909**	
S.D.	72.2640	99.4764	125.9337	123.1632	
N	10	10	10	9	
KIDNEYS					
MEAN	171.531	173.040	178.222	169.487	
S.D.	22.0467	13.3601	17.7815	14.5157	
N	10	10	10	9	
HEART					
MEAN	79.876	76.060	80.154	74.208	
S.D.	6.7680	4.8868	8.5239	8.4144	
N	10	10	10	9	
SPLEEN					
MEAN	39.358	36.539	35.547	38.110	
S.D.	6.7474	5.5071	7.0463	7.1132	
N	10	10	10	9	

\* = Significantly different from the control group at 0.05 using Dunnett's test

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 59 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
PROSTATE	MEAN	46.384		47.829			55.486		55.486			62.728 **
	S.D.	8.4173		10.0155			10.1167		10.1167			11.0055
	N	10		10			10		10			9
RT TESTIS	MEAN	78.483		78.473			81.318		79.131			
	S.D.	17.9475		8.1704			8.8541		10.5988			
	N	10		10			10		10			9
LT TESTIS	MEAN	77.638		80.365			81.283		79.533			
	S.D.	18.7816		7.2233			8.3092		9.6558			
	N	10		10			10		10			9
RT EPIDIDYMIS	MEAN	31.348		33.873			33.221		34.677			
	S.D.	9.5888		1.1361			3.7338		3.4207			
	N	10		10			10		10			9
LT EPIDIDYMIS	MEAN	30.734		33.432			32.770		33.260			
	S.D.	5.9093		2.4588			5.1808		2.9945			
	N	10		10			10		10			9

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 59 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
RT CAUDA EPID	MEAN	13.963		14.575		14.917		15.427				
	S.D.	3.5418		1.3879		2.0887		2.8405				
	N	10		10		10		9				
LT CAUDA EPID	MEAN	13.848		14.906		14.700		14.927				
	S.D.	3.1614		1.2099		2.4043		1.5912				
	N	10		10		10		9				
THYMUS GLAND	MEAN	15.109		14.718		13.985		12.991				
	S.D.	1.9956		2.7546		3.2124		2.2613				
	N	10		10		10		9				
ADRENAL GLANDS	MEAN	2.724		2.832		2.651		2.812				
	S.D.	0.4843		0.2256		0.4485		0.3282				
	N	10		10		10		9				
THYROIDS/PARA	MEAN	1.136		1.345		1.282		1.174				
	S.D.	0.2689		0.4094		0.2883		0.2776				
	N	10		10		10		9				

None significantly different from control group

TABLE 59 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

	GROUP:	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY	1000 MG/KG/DAY
BRAIN WT (GRAMS)	MEAN	1.86	1.84	1.86	1.83	
	S.D.	0.101	0.055	0.097	0.080	
	N	10	10	10	10	
LIVER	MEAN	437.081	540.096**	569.302**	679.164**	
	S.D.	43.1075	70.0643	71.2531	93.3866	
	N	10	10	10	10	
KIDNEYS	MEAN	112.434	108.146	111.437	112.010	
	S.D.	10.1439	12.0548	13.7678	12.6328	
	N	10	10	10	10	
HEART	MEAN	59.174	57.602	57.787	58.387	
	S.D.	10.3910	6.8685	4.9801	7.1083	
	N	10	10	10	10	
SPLEEN	MEAN	27.361	26.778	29.817	28.628	
	S.D.	3.9034	3.0097	6.5355	6.6758	
	N	10	10	10	10	

\*\* = Significantly different from the control group at 0.01 using Dunnett's test

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 59 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	F E M A L E			300 MG/KG/DAY	1000 MG/KG/DAY
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY		
UTERUS/CX	MEAN	43.385	34.548	35.851	33.980
	S.D.	12.5658	8.8610	8.3508	9.6386
	N	10	10	10	10
OVARIES/OVIDUCTS	MEAN	7.722	7.051	6.996	8.085
	S.D.	1.4211	1.3622	1.5114	1.1273
	N	10	10	10	10
THYMUS GLAND	MEAN	13.361	14.951	14.446	12.420
	S.D.	3.0866	2.3536	4.5044	3.2333
	N	10	10	10	10
ADRENAL GLANDS	MEAN	3.831	3.924	4.052	3.825
	S.D.	0.4801	0.5418	0.6028	0.6696
	N	10	10	10	10
THYROIDS/PARA	MEAN	0.922	1.063	0.977	1.083
	S.D.	0.1620	0.2437	0.1294	0.2363
	N	10	10	10	10

None significantly different from control group

POFBSTv4.04  
11/16/2000  
R:07/18/2001

TABLE 60 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	M A L E			300 MG/KG/DAY	1000 MG/KG/DAY
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY		
BRAIN WT (GRAMS)					
MEAN	1.97	2.07	2.05	1.97	1.97
S.D.	0.135	0.084	0.076	0.121	0.121
N	5	5	5	5	5
LIVER					
MEAN	732.937	710.078	765.219	715.014	715.014
S.D.	72.5662	97.1514	100.0316	121.0028	121.0028
N	5	5	5	5	5
KIDNEYS					
MEAN	175.781	175.470	192.897	183.809	183.809
S.D.	22.0290	23.0192	30.3680	20.0476	20.0476
N	5	5	5	5	5
HEART					
MEAN	83.796	77.488	82.163	80.597	80.597
S.D.	10.0979	5.2430	8.2863	11.0313	11.0313
N	5	5	5	5	5
SPLEEN					
MEAN	32.696	36.010	39.712	33.260	33.260
S.D.	2.0529	2.4779	5.0817	5.2398	5.2398
N	5	5	5	5	5

None significantly different from control group

TABLE 60 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
			M A L E			M A L E			M A L E			M A L E
PROSTATE	MEAN	62.220		41.113		52.104			55.058			
	S.D.	13.3448	5	7.1900	5	17.5574	5		15.2088	5		
	N											
RT TESTIS	MEAN	82.576		62.735		80.003			79.931			
	S.D.	5.2942	5	29.7383	5	7.6873	5		9.4043	5		
	N											
LT TESTIS	MEAN	79.358		72.225		80.803			80.223			
	S.D.	6.7285	5	12.1905	5	9.0404	5		9.1515	5		
	N											
RT EPIDIDYMIS	MEAN	36.194		28.188		35.730			35.405			
	S.D.	2.5130	5	14.3767	5	3.3907	5		3.3221	5		
	N											
LT EPIDIDYMIS	MEAN	35.164		33.449		34.988			35.211			
	S.D.	3.7673	5	4.5521	5	2.8350	5		1.6331	5		
	N											

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 60 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
		M	A	L	E		M	A	L	E		M
RT CAUDA EPID	MEAN	15.357		14.995			15.816		14.574			
	S.D.	2.1024		1.6278			2.6146		1.5795			
	N	5		4			5		5			
LT CAUDA EPID	MEAN	15.658		15.510			16.286		15.612			
	S.D.	2.2824		3.3436			2.4418		0.7419			
	N	5		5			5		5			
THYMUS GLAND	MEAN	15.630		10.853			14.691		13.757			
	S.D.	3.3474		2.6465			3.7282		2.9484			
	N	5		5			5		5			
ADRENAL GLANDS	MEAN	3.333		3.117			2.774		2.741			
	S.D.	0.5331		0.3423			0.2928		0.5747			
	N	5		5			5		5			
THYROIDS/PARA	MEAN	1.468		1.484			1.374		1.422			
	S.D.	0.1994		0.2967			0.2980		0.2480			
	N	5		5			5		5			

None significantly different from control group

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 60 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	F E M A L E			M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
BRAIN WT (GRAMS)						
MEAN	1.88	1.91	1.89	1.88	0.047	0.102
S.D.	0.055	0.047	0.055	0.055	5	5
N	5	5	5	5	5	5
LIVER						
MEAN	429.261	397.033	465.529	484.292		
S.D.	38.2944	23.6652	85.1351	75.7676		
N	5	5	5	5		
KIDNEYS						
MEAN	104.161	95.326	111.812	111.759		
S.D.	9.2009	9.2942	15.0320	18.9965		
N	5	5	5	5		
HEART						
MEAN	55.551	51.791	55.169	60.468		
S.D.	7.5305	3.4171	7.6394	8.0557		
N	5	5	5	5		
SPLEEN						
MEAN	25.475	28.179	29.355	28.655		
S.D.	1.0584	3.5375	5.7752	3.8024		
N	5	5	5	5		

None significantly different from control group

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 60 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

GROUP:	F E M A L E			M A L E		
	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY
UTERUS/CX						
MEAN	41.457	29.174	38.962	38.435		
S.D.	17.7765	6.1696	9.8704	12.1446		
N	5	5	5	5		
OVARIES/OVIDUCTS						
MEAN	6.607	7.327	7.548	7.490		
S.D.	1.2769	0.5684	1.6201	0.8712		
N	5	5	5	5		
THYMUS GLAND						
MEAN	13.930	13.694	9.954	12.886		
S.D.	2.7837	2.0835	3.1686	4.3003		
N	5	5	5	5		
ADRENAL GLANDS						
MEAN	3.499	3.321	3.724	3.802		
S.D.	0.3553	0.6895	0.7955	0.5151		
N	5	5	5	5		
THYROIDS/PARA						
MEAN	0.866	1.071	1.176*	1.192*		
S.D.	0.1554	0.2061	0.1897	0.1211		
N	5	5	5	5		

\* = Significantly different from the control group at 0.05 using Dunnett's test

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

NUMBER OF ANIMALS EXAMINED	NUMBER OF ANIMALS EXAMINED	DOSE GROUP	GROUP:	MALE			
				1	2	3	4
AORTA							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
STERNEBRAE							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
BRAIN							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
CECUM							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
COLON							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
DUODENITM							
TOTAL NUMBER EXAMINED				0	0	0	0
EXAMINED, UNREMARKABLE				0	0	0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY				

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE			
	GROUP:	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED		0	0	0	1
ESOPHAGUS					
TOTAL NUMBER EXAMINED		0	0	0	1
EXAMINED, UNREMARKABLE		0	0	0	1
EYES/OPTIC N.					
TOTAL NUMBER EXAMINED		0	0	0	1
EXAMINED, UNREMARKABLE		0	0	0	1
HEART					
TOTAL NUMBER EXAMINED		0	0	0	1
EXAMINED, UNREMARKABLE		0	0	0	1
ILEUM					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
TOO AUTOLYZED TO EXAMINE		0	0	0	1
JEJUNUM					
TOTAL NUMBER EXAMINED		0	0	0	1
EXAMINED, UNREMARKABLE		0	0	0	1
KIDNEYS					
TOTAL NUMBER EXAMINED		0	0	0	1
EXAMINED, UNREMARKABLE		0	0	0	0
-INFLAMMATION, SUBACUTE		0	0	0	1
MINIMAL		NONE	NONE	NONE	1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE					
		FEMALE					
		GROUP:		1		2	
NUMBER OF ANIMALS IN DOSE GROUP		15		15		15	
NUMBER OF ANIMALS EXAMINED		0		0		0	
KIDNEYS - CONTINUED							
- BASOPHILIC TUBULES		0		0		0	
MINIMAL		NONE		NONE		NONE	
- HYDRONEPHROSIS		0		0		0	
MILD		NONE		NONE		NONE	
LIVER							
TOTAL NUMBER EXAMINED		0		0		0	
EXAMINED, UNREMARKABLE		0		0		0	
- INFLAMMATION, SUBACUTE		0		0		0	
MINIMAL		NONE		NONE		NONE	
- PAS STAIN, POSITIVE		0		0		0	
MODERATE		NONE		NONE		NONE	
- OIL RED O, POSITIVE		0		0		0	
MILD		NONE		NONE		NONE	
LYMPH NODE, MES							
TOTAL NUMBER EXAMINED		0		0		0	
EXAMINED, UNREMARKABLE		0		0		0	
ADRENAL CORTEX							
TOTAL NUMBER EXAMINED		0		0		0	
EXAMINED, UNREMARKABLE		0		0		0	
1- 0 MG/KG/DAY		2- 100 MG/KG/DAY		3- 300 MG/KG/DAY		4- 1000 MG/KG/DAY	

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE					
		GROUP:					
NUMBER OF ANIMALS IN DOSE GROUP		1			2		
LUNGS	NUMBER OF ANIMALS EXAMINED	15			15		3
TOTAL NUMBER EXAMINED		0			0		4
EXAMINED, UNREMARKABLE		0			0		
-HEMORRHAGE		0			0		
MODERATE		0			0		
NONE		0			0		
ADRENAL MEDULLA							
TOTAL NUMBER EXAMINED		0			0		
EXAMINED, UNREMARKABLE		0			0		
NERVE, SCATATIC							
TOTAL NUMBER EXAMINED		0			0		
EXAMINED, UNREMARKABLE		0			0		
STOMACH, GLD							
TOTAL NUMBER EXAMINED		0			0		
EXAMINED, UNREMARKABLE		0			0		
STOMACH, NONGLD							
TOTAL NUMBER EXAMINED		0			0		
EXAMINED, UNREMARKABLE		0			0		
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE			
	GROUP:	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED		0	0	0	0
MARROW, STERN	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PANCREAS	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PARATHYROID	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
RT EPIDIDYMIS	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
RECTUM	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PITUITARY	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE	
		GROUP:	
		1	2
NUMBER OF ANIMALS IN DOSE GROUP		15	15
NUMBER OF ANIMALS EXAMINED		0	0
PROSTATE			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
SAL. GLAND MAND			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
SEMINAL VESICLES			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
SKELETAL MUSCLE			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
SKIN			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
SPINAL CORD			
TOTAL NUMBER EXAMINED		0	0
EXAMINED, UNREMARKABLE		0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 61 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED		0	0	0	0
SPLEEN	TOTAL NUMBER EXAMINED	0	0	0	0
	-EXAMINED, UNREMARKABLE	0	0	0	0
	-HEMATOPoEsis, EXTRAMEDULLARY	0	0	0	0
	-MINIMAL	NONE	NONE	NONE	NONE
LYMPH NODE, MAND	TOTAL NUMBER EXAMINED	0	0	0	0
	-EXAMINED, UNREMARKABLE	0	0	0	0
THYMUS GLAND	TOTAL NUMBER EXAMINED	0	0	0	0
	-EXAMINED, UNREMARKABLE	0	0	0	0
	-HEMORRHAGE	0	0	0	0
	-MINIMAL	NONE	NONE	NONE	NONE
THYROID GLANDS	TOTAL NUMBER EXAMINED	0	0	0	0
	-EXAMINED, UNREMARKABLE	0	0	0	0
RT TESTIS	TOTAL NUMBER EXAMINED	0	0	0	0
	-EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 6.1 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
HISTOMORPHOLOGICAL DIAGNOSIS -- SUMMARY INCIDENCE

		MALE			
		FEMALE			
GROUP:		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED		0	0	0	0
TRACHEA					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
VAS DEFERENS					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
URINARY BLADDER					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PHS12v4.17  
03/12/2001  
R:07/18/2001

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		GROUP:	MALE	3	4
			1	2	
AORTA	NUMBER OF ANIMALS IN DOSE GROUP		15	15	
	NUMBER OF ANIMALS EXAMINED WEEK 13		10	10	
	TOTAL NUMBER EXAMINED		10	0	0
	EXAMINED, UNREMARKABLE		10	0	0
STERNEBRAE	NUMBER OF ANIMALS IN DOSE GROUP		10	0	
	NUMBER OF ANIMALS EXAMINED WEEK 13		10	0	
	TOTAL NUMBER EXAMINED		10	0	0
	EXAMINED, UNREMARKABLE		10	0	0
BRAIN	NUMBER OF ANIMALS IN DOSE GROUP		10	0	
	NUMBER OF ANIMALS EXAMINED WEEK 13		10	0	
	TOTAL NUMBER EXAMINED		10	0	0
	EXAMINED, UNREMARKABLE		10	0	0
CECUM	NUMBER OF ANIMALS IN DOSE GROUP		10	0	
	NUMBER OF ANIMALS EXAMINED WEEK 13		9	0	
	TOTAL NUMBER EXAMINED		10	0	0
	EXAMINED, UNREMARKABLE		9	0	0
	-INFLAMMATION, SUBACUTE		1	0	0
	MILD		1	0	0
COLON	NUMBER OF ANIMALS IN DOSE GROUP		10	0	
	NUMBER OF ANIMALS EXAMINED WEEK 13		10	0	
	TOTAL NUMBER EXAMINED		10	0	0
	EXAMINED, UNREMARKABLE		10	0	0
	-HYPERPLASIA, LYMPHOID		0	0	0
	MILD		0	0	0
	NONE		NONE	NONE	1
	1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
DUODENUM	10	10	10	9
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
ESOPHAGUS	10	0	0	0
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
-DEGENERATION	0	0	0	0
MINIMAL	NONE	NONE	NONE	1
EYES/OPTIC N.				
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
HEART	10	0	0	0
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
-CARDIOMYOPATHY	5	0	0	0
MINIMAL	5	NONE	NONE	3
ILEUM				
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
1 - 0 MG/KG/DAY      2 - 100 MG/KG/DAY      3 - 300 MG/KG/DAY      4 - 1000 MG/KG/DAY				

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
JEJUNUM	10	10	10	10
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
KIDNEYS				
TOTAL NUMBER EXAMINED	10	0	1	1
EXAMINED, UNREMARKABLE	4	0	0	0
-INFLAMMATION, SUBACUTE	3	0	0	0
MINIMAL	1	NONE	NONE	NONE
MILD	2	NONE	NONE	NONE
-BASOPHILIC TUBULES				
MINIMAL	4	0	1	1
MILD	2	NONE	1	1
-CYST, CORTICAL	2	NONE	0	0
MILD	1	0	0	0
LIVER				
TOTAL NUMBER EXAMINED	10	10	10	10
EXAMINED, UNREMARKABLE	0	0	0	0
-INFLAMMATION, SUBACUTE	9	8	10	10
MINIMAL	9	8	10	10
MILD	NONE	NONE	NONE	NONE
-VACUOLATION, HEPATOCELLULAR				
MINIMAL	2	6	5	5
MILD	1	5	4	5
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
LIVER	- CONTINUED			
-HEMATOPOIESIS, EXTRAMEDULLARY				
MINIMAL	1	0	0	0
-NECROSIS	1	NONE	NONE	NONE
MINIMAL	0	0	1	1
-PAS STAIN, POSITIVE	NONE	NONE	1	1
MINIMAL	2	0	0	0
MILD	2	NONE	NONE	NONE
-OIL RED O, POSITIVE	NONE	NONE	NONE	NONE
MILD	5	0	0	0
MODERATE	2	NONE	NONE	NONE
-PAS STAIN, NEGATIVE	3	NONE	NONE	NONE
PRESENT	3	0	0	0
LYMPH NODE, MES				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
ADRENAL CORTEX				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	9	0	0	0
-VACUOLATION	1	0	0	0
MINIMAL	NONE	NONE	NONE	NONE
MILD	1	NONE	NONE	NONE
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
	GROUP:	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13		10	10	10	9
LUNGS					
TOTAL NUMBER EXAMINED		10	10	10	10
EXAMINED, UNREMARKABLE		2	5	1	9
-MINERALIZATION, VASCULAR		5	2	5	2
MINIMAL		5	2	5	6
-HEMORRHAGE		0	0	0	6
MINIMAL		NONE	NONE	NONE	2
-INFLAMMATION, CHRONIC		2	1	2	3
MINIMAL		NONE	NONE	2	2
MILD		2	1	NONE	1
-HISTIOCYTOSIS, ALVEOLAR		5	3	2	0
MINIMAL		3	2	1	NONE
MILD		2	1	1	NONE
-INFLAMMATION, SUBACUTE		1	0	0	1
MINIMAL		1	NONE	NONE	1
-INFLAMMATION, GRANULOMATOUS		0	2	4	3
MINIMAL		NONE	1	4	2
MILD		NONE	1	NONE	1
-INFLAMMATION, ACUTE		0	0	1	0
MINIMAL		NONE	NONE	1	NONE
ADRENAL MEDULLA					
TOTAL NUMBER EXAMINED		10	0	0	9
EXAMINED, UNREMARKABLE		10	0	0	9
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13	10	10	10	10
NERVE, SCITATIC				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
STOMACH, GLD				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
STOMACH, NONGLD				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
NOT EXAMINED	0	0	0	0
-CYST, KERATIN	0	0	0	0
MILD	NONE	NONE	NONE	NONE
MARROW, STERN				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
PANCREAS				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	9	0	0	0
-INFILTRATE, FATTY	1	0	0	0
MINIMAL	1	NONE	NONE	NONE
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		PAGE 7			
		MALE			
		MALE			
GROUP:		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13		10	10	10	10
PANCREAS - CONTINUED					
HYPERPLASIA, DUCTAL		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
PARATHYROID					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
RT EPIDIDYMIS					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		9	0	0	0
-LUMINAL DEBRIS, CELLULAR		1	0	0	0
MODERATE		1	NONE	NONE	NONE
-HYPOSPERMIA		1	0	0	0
SEVERE		1	NONE	NONE	NONE
-INFILTRATE, MONONUCLEAR		0	0	0	1
MINIMAL		NONE	NONE	NONE	1
RECTUM					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		9	0	0	0
-PARASITES, NEMATODES		1	0	0	0
PRESENT		1	NONE	NONE	NONE
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
PITUITARY	10	10	10	9
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	0
PROSTATE				
TOTAL NUMBER EXAMINED	10	10	10	10
EXAMINED, UNREMARKABLE	3	5	3	9
-INFLAMMATION, SUBACUTE	6	1	5	5
MINIMAL	2	1	4	2
MILD	4	NONE	1	NONE
-INFLAMMATION, CHRONIC ACTIVE	1	4	2	0
MINIMAL	NONE	4	2	NONE
MILD	1	NONE	NONE	NONE
-INFLAMMATION, ACUTE	0	0	0	1
MINIMAL	NONE	NONE	NONE	1
-HYPERTROPHY, EPITHELIAL	0	NONE	0	1
MILD	NONE	NONE	0	1
SAL. GLAND MAND				
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	9
PITUITARY	10	0	0	9
PROSTATE				
TOTAL NUMBER EXAMINED				
EXAMINED, UNREMARKABLE	10	0	0	9
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13	10	10	10	9
SEMINAL VESICLES				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
SKELETAL MUSCLE				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	7	0	0	0
-DEGENERATION	3	0	0	0
MINIMAL	3	NONE	NONE	1
-INFLAMMATION, SUBACUTE	0	0	0	1
MINIMAL	NONE	NONE	NONE	1
SKIN				
TOTAL NUMBER EXAMINED	10	2	0	9
EXAMINED, UNREMARKABLE	10	0	0	7
-INFLAMMATION, CHRONIC ACTIVE	0	2	0	1
MODERATE	NONE	2	NONE	1
-INFLAMMATION, CHRONIC	0	0	0	1
Moderate	NONE	NONE	NONE	1
SPINAL CORD				
TOTAL NUMBER EXAMINED	10	0	0	9
EXAMINED, UNREMARKABLE	9	0	0	9
-HEMORRHAGE	1	0	0	0
MINIMAL	1	NONE	NONE	NONE
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
		10	10	10	9
SPLEEN					
TOTAL NUMBER EXAMINED		10	0	0	0
-EXAMINED, UNREMARKABLE		8	0	0	9
-VACUOLATION		1	0	0	7
MINIMAL		1	NONE	NONE	1
-HEMATOPOLEISIS, EXTRAMEDULLARY		1	0	0	1
MINIMAL		0	NONE	NONE	1
-DEPLETION, LYMPHOID		1	0	0	1
MINIMAL		1	NONE	NONE	0
LYMPH NODE, MAND.					
TOTAL NUMBER EXAMINED		10	0	0	0
-EXAMINED, UNREMARKABLE		6	0	0	9
-HEMORRHAGE		2	0	0	8
MILD		2	NONE	NONE	0
-PLASMACYTOSIS, MEDULLARY		2	0	0	0
MINIMAL		3	NONE	NONE	0
MILD		1	NONE	NONE	0
MODERATE		1	NONE	NONE	0
-HYPERPLASIA, LYMPHOID		1	NONE	NONE	0
MINIMAL		0	0	0	1
			NONE	NONE	1
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13		10	10	10	9
THYMUS GLAND					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
-HEMORRHAGE		8	0	0	0
MINIMAL		4	NONE	NONE	6
MILD		4	NONE	NONE	5
-ATROPHY		8	0	0	1
MINIMAL		8	NONE	NONE	7
THYROID GLANDS					
TOTAL NUMBER EXAMINED		10	10	10	9
EXAMINED, UNREMARKABLE		6	6	4	0
-CYST, ULTIMOBRANCHIAL		2	3	4	3
MINIMAL		NONE	2	2	2
MILD		2	1	2	1
-HYPERTROPHY, FOLLICULAR CELL		1	1	5	8
MINIMAL		1	NONE	NONE	7
MILD		1	0	0	1
-INFLAMMATION, SUBACUTE		1	NONE	NONE	0
MILD		1	NONE	NONE	NONE
RT TESTIS					
TOTAL NUMBER EXAMINED		10	0	0	9
EXAMINED, UNREMARKABLE		9	0	0	9
-DEGENERATION, SEMINIFEROUS TUBULES		1	0	0	0
MODERATE		1	NONE	NONE	NONE
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15
TRACHEA					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		9	0	0	9
-DILATATION, GLANDULAR		1	0	0	8
MINIMAL		1	0	0	1
MILD		1	NONE	NONE	NONE
VAS DEFERENS					
TOTAL NUMBER EXAMINED		10	0	0	9
EXAMINED, UNREMARKABLE		10	0	0	9
URINARY BLADDER					
TOTAL NUMBER EXAMINED		10	0	0	9
EXAMINED, UNREMARKABLE		10	0	0	9
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

NUMBER OF ANIMALS IN DOSE GROUP NUMBER OF ANIMALS EXAMINED WEEK 13	FEMALE			
	GROUP: 1	2	3	4
ADRENAL GLANDS				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	15 10	15 10	15 10	15 10
AORTA				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	1 1	NA NA	NA NA	NA NA
STERNEBRAE				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	10 10	0 0	0 0	0 0
OVIDUCTS				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	10 10	0 0	0 0	0 0
BRAIN				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	10 10	0 0	0 0	0 0
CECUM				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	10 10	0 0	0 0	0 0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	
NA = NOT APPLICABLE				

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	FEMALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
COLON	10	10	10	10
TOTAL NUMBER EXAMINED				
-EXAMINED, UNREMARKABLE	10	0	0	0
DUODENUM	10	0	0	0
TOTAL NUMBER EXAMINED				
-EXAMINED, UNREMARKABLE	10	0	0	0
ESOPHAGUS				
TOTAL NUMBER EXAMINED				
-EXAMINED, UNREMARKABLE	10	0	0	0
-DEGENERATION	8	0	0	0
MINIMAL	2	0	0	0
MILD	1	NONE	NONE	NONE
EYES/OPTIC N.				
TOTAL NUMBER EXAMINED				
-EXAMINED, UNREMARKABLE	10	0	0	0
HARDERIAN GLANDS				
TOTAL NUMBER EXAMINED				
-EXAMINED, UNREMARKABLE	NA	NA	NA	NA
-PIGMENT	NA	NA	NA	NA
MINIMAL	NA	NA	NA	NA
1- 0 MG/KG/DAY	1-	2-	3-	4-
NA = NOT APPLICABLE	0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY

PROJECT NO.: WIL-1B6012  
SPONSOR: CMA-BFRP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15
HEART					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		8	0	0	0
-CARDIOMYOPATHY		1	0	0	0
MINIMAL		1	NONE	NONE	2
MILD		1	NONE	NONE	1
- INFLAMMATION		1	0	0	1
MILD		1	NONE	NONE	0
ILEUM					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
JEJUNUM					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
KIDNEYS					
TOTAL NUMBER EXAMINED		10	0	1	10
EXAMINED, UNREMARKABLE		7	0	0	3
-INFLAMMATION, SUBACUTE		1	0	1	3
MINIMAL		1	NONE	1	3
-BASOPHILIC TUBULES		1	0	1	1
MINIMAL		1	NONE	0	1
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

FEMALE						
	GROUP:	1	2	3	4	
NUMBER OF ANIMALS IN DOSE GROUP						
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15	
KIDNEYS						
- CONTINUED						
-MINERALIZATION, PELVIC		1	0	0	0	4
MINIMAL		1	NONE	NONE	NONE	4
-MULTILAMELLAR BODY		1	0	0	0	0
MINIMAL		1	NONE	NONE	NONE	NONE
-MINERALIZATION, PAPILLARY TUBULAR		1	0	0	0	1
MINIMAL		2	NONE	NONE	NONE	1
MODERATE		1	NONE	NONE	NONE	NONE
LIVER						
TOTAL NUMBER EXAMINED		10	10	10	10	10
EXAMINED, UNMARKABLE		1	1	1	0	0
-INFLAMMATION, SUBACUTE		9	9	9	9	10
MINIMAL		8	9	9	9	8
MILD		1	NONE	NONE	NONE	2
-VACUOLATION, HEPATOCELLULAR		3	6	5	5	9
MINIMAL		3	NONE	3	3	5
MILD		2	NONE	1	1	2
MODERATE		0	NONE	1	1	2
-HYPERTROPHY, HEPATOCELLULAR, CENTRILOBULAR		0	0	0	0	5
MINIMAL		0	NONE	NONE	NONE	2
MILD		0	NONE	NONE	NONE	3
-PAS STAIN, POSITIVE		1	0	0	0	2
MINIMAL		1	NONE	NONE	NONE	2
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1			
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15		15	
LIVER	- CONTINUED				
-OIL RED O, POSITIVE		4		0	
MINIMAL		1		NONE	
MILD		3		NONE	
MODERATE		NONE		NONE	
-PAS STAIN, NEGATIVE		4		0	
PRESENT		4		NONE	
-OIL RED O, NEGATIVE		1		0	
PRESENT		1		NONE	
LYMPH NODE, MES					
TOTAL NUMBER EXAMINED		10		0	
EXAMINED, UNREMARKABLE		10		0	
ADRENAL CORTEX					
TOTAL NUMBER EXAMINED		10		0	
EXAMINED, UNREMARKABLE		10		0	
LUNGS					
TOTAL NUMBER EXAMINED		10		10	
EXAMINED, UNREMARKABLE		2		4	
-MINERALIZATION, VASCULAR		4		1	
MINIMAL		4		3	
-INFLAMMATION, CHRONIC		5		1	
MINIMAL		4		3	
MILD		1		1	
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED WEEK 13				
LUNGS	- CONTINUED				
- HISTIOCYTOSIS, ALVEOLAR					
MINIMAL		5	3	3	8
MILD		5	2	3	8
- INFLAMMATION, SUBACUTE		NONE	1	NONE	NONE
MINIMAL		1	0	0	0
- INFLAMMATION, GRANULOMATOUS					
MINIMAL		1	0	0	NONE
- INFLAMMATION, CHRONIC ACTIVE					
MODERATE		0	NONE	2	7
MAMMARY GLAND					
TOTAL NUMBER EXAMINED					
EXAMINED, UNREMARKABLE		9	0	0	10
NOT EXAMINED		9	0	0	8
- HYPERPLASIA, LOBULAR		1	0	0	0
MINIMAL		0	NONE	0	2
MILD		NONE	NONE	NONE	1
ADRENAL MEDULLA					
TOTAL NUMBER EXAMINED					
EXAMINED, UNREMARKABLE		9	0	0	10
NOT EXAMINED		9	0	0	0
1 - 0 MG/KG/DAY    2 - 100 MG/KG/DAY    3 - 300 MG/KG/DAY    4 - 1000 MG/KG/DAY					

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	FEMALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 13	10	10	10	10
NERVE, SCITATIC				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
STOMACH, GLD				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
STOMACH, NONGLD				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
MARROW, STERN				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
OVARIES				
TOTAL NUMBER EXAMINED	10	0	1	1
EXAMINED, UNREMARKABLE	9	0	0	0
-CYST	1	0	0	0
MINIMAL	1	NONE	NONE	NONE
-ATROPHY	0	NONE	1	0
MINIMAL	0	NONE	1	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
PANCREAS		10	10	10	10
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
- INFLAMMATION, SUBACUTE		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
PARATHYROID					
TOTAL NUMBER EXAMINED		7	0	0	0
EXAMINED, UNREMARKABLE		7	0	0	0
NOT EXAMINED		3	0	0	0
RECTUM					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
PITUITARY					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
SAL. GLAND MAND					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY					
351 of 1527					

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15
SKELETAL MUSCLE		10	10	10	10
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		9	0	0	0
-DEGENERATION		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
-INFLAMMATION, SUBACUTE		1	0	0	0
MINIMAL		1	NONE	NONE	NONE
SKIN					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
-INFLAMMATION, CHRONIC ACTIVE		0	0	0	0
MODERATE		NONE	NONE	NONE	NONE
SPINAL CORD					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
SPLEEN					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		9	0	0	0
-HEMATOPOIESIS, EXTRAMEDULLARY		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
-PIGMENT, BROWN		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE

1- 0 MG/KG/DAY    2- 100 MG/KG/DAY    3- 300 MG/KG/DAY    4- 1000 MG/KG/DAY

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15
SPLEEN	- CONTINUED	10	10	10	10
-HYPERPLASIA, LYMPHOID					
MINIMAL		1	0	0	0
LYMPH NODE, MAND					
TOTAL NUMBER EXAMINED		1	NONE	NONE	NONE
EXAMINED, UNREMARKABLE					
-HYPERPLASIA, LYMPHOID					
MINIMAL					
THYMUS GLAND					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE					
-HEMORRHAGE		1	0	0	0
MINIMAL		5	0	0	0
-ATROPHY					
MINIMAL		5	NONE	NONE	NONE
MILD		8	0	0	0
THYROID GLANDS					
TOTAL NUMBER EXAMINED		10	10	10	10
EXAMINED, UNREMARKABLE					
-CYST, ULTIMOBRANCHIAL		8	6	5	5
MINIMAL		2	4	3	3
MILD		NONE	4	3	4
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	FEMALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 13	15	15	15	15
THYROID GLANDS - CONTINUED				
-HYPERTROPHY, FOLLICULAR CELL	0	0	4	7
MINIMAL	NONE	NONE	4	3
MILD	NONE	NONE	NONE	4
TRACHEA				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
-DILATATION, GLANDULAR	0	0	0	0
MINIMAL	NONE	NONE	NONE	2
URINARY BLADDER				
TOTAL NUMBER EXAMINED	10	0	0	0
EXAMINED, UNREMARKABLE	10	0	0	0
UTERUS				
TOTAL NUMBER EXAMINED	10	0	1	10
EXAMINED, UNREMARKABLE	8	0	0	7
-DILATATION, LUMEN	2	0	0	3
MINIMAL	1	NONE	NONE	3
MILD	1	NONE	NONE	0
-METAPLASIA, SQUAMOUS	0	1	1	0
MINIMAL	NONE	NONE	NONE	NONE
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY	

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 62 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 13		15	15	15	15
VAGINA		10	10	10	10
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
-INFLAMMATION, CHRONIC ACTIVE		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
-INFLAMMATION, SUBACUTE		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
CERVIX					
TOTAL NUMBER EXAMINED		10	0	0	0
EXAMINED, UNREMARKABLE		10	0	0	0
-INFLAMMATION, ACUTE		0	0	0	0
MINIMAL		NONE	NONE	NONE	NONE
EAR (S)					
TOTAL NUMBER EXAMINED		NA	NA	2	NA
EXAMINED, UNREMARKABLE		NA	NA	0	NA
-CHONDROPATHY, AURICULAR		NA	NA	2	NA
MILD		NA	NA	2	NA
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		
NA = NOT APPLICABLE					

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12/11/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	NUMBER OF ANIMALS IN DOSE GROUP NUMBER OF ANIMALS EXAMINED WEEK 17	GROUP:	MALE			
			1	2	3	4
AORTA						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
STERNEBRAE						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
BRAIN						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
CECUM						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
COLON						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
DUODENITUM						
TOTAL NUMBER EXAMINED			0	0	0	0
EXAMINED, UNREMARKABLE			0	0	0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY			

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		PAGE 2			
		MALE			
		GROUP:			
NUMBER OF ANIMALS IN DOSE GROUP	NUMBER OF ANIMALS EXAMINED WEEK 17	1	2	3	4
ESOPHAGUS		15	15	15	15
TOTAL NUMBER EXAMINED		5	5	5	5
EXAMINED, UNREMARKABLE		0	0	0	0
EYES/OPTIC N.		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
HEART		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
ILEUM		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
JEJUNUM		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
KIDNEYS		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

PAGE 3

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
LIVER				
TOTAL NUMBER EXAMINED	5	5	5	5
EXAMINED, UNREMARKABLE	0	0	0	0
-INFLAMMATION, SUBACUTE	5	5	5	5
MINIMAL	5	5	5	5
-VACUOLATION, HEPATOCELLULAR	3	0	2	4
MINIMAL	3	NONE	2	1
LYMPH NODE, MES				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
ADRENAL CORTEX				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
LUNGS				
TOTAL NUMBER EXAMINED	5	5	5	5
EXAMINED, UNREMARKABLE	2	5	1	5
-MINERALIZATION, VASCULAR	3	0	2	0
MINIMAL	3	NONE	2	3
-INFLAMMATION, CHRONIC	1	0	1	3
MINIMAL	1	NONE	1	NONE
-HISTIOCYTOSIS, ALVEOLAR	1	0	2	2
MINIMAL	1	NONE	1	2
MILD	1	NONE	1	NONE
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
LUNGS	- CONTINUED			
- INFLAMMATION, SUBACUTE	0	0	0	0
MINIMAL	NONE	NONE	1	NONE
- INFLAMMATION, GRANULOMATOUS	0	0	1	0
MINIMAL	NONE	NONE	0	3
ADRENAL MEDULLA				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
NERVE, SCITATIC				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
STOMACH, GLD				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
STOMACH, NONGLD				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		PAGE 5			
		MALE			
	GROUP:	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17		5	5	5	5
MARROW, STERN	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PANCREAS	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PARATHYROID	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
RT EPIDIDYMIS	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
RECTUM	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
PITUITARY	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY      2- 100 MG/KG/DAY      3- 300 MG/KG/DAY      4- 1000 MG/KG/DAY					

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	MALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
PROSTATE				
TOTAL NUMBER EXAMINED	5	5	5	5
EXAMINED, UNREMARKABLE	3	4	3	3
-INFLAMMATION, SUBACUTE	0	0	1	2
MINIMAL	NONE	NONE	1	2
-INFLAMMATION, CHRONIC ACTIVE	2	0	0	0
MINIMAL	2	NONE	NONE	NONE
-INFLAMMATION, ACUTE	0	0	1	0
MINIMAL	NONE	NONE	1	NONE
-HYPERTROPHY, EPITHELIAL	0	0	0	0
MINIMAL	NONE	1	NONE	NONE
SAL. GLAND MAND				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
SEMINAL VESICLES				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
SKELETAL MUSCLE				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
1 - 0 MG/KG/DAY    2 - 100 MG/KG/DAY    3 - 300 MG/KG/DAY    4 - 1000 MG/KG/DAY				

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
SKIN	NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
SPINAL CORD		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
SPLEEN		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
LYMPH NODE, MAND		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
THYMUS GLAND		0	0	0	0
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
THYROID GLANDS		5	5	5	5
TOTAL NUMBER EXAMINED		5	5	5	5
EXAMINED, UNREMARKABLE		3	3	1	1
-CYST, ULTIMOBRANCHIAL		1	2	2	2
MINIMAL		1	NONE	0	0
MILD		2	2	2	2
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		MALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 17		15	15	15	15
THYROID GLANDS - CONTINUED					
-HYPERTROPHY, FOLLICULAR CELL		2	0	3	3
MINIMAL		2	NONE	3	3
-INFLAMMATION, SUBACUTE		0	0	1	0
MINIMAL		NONE	NONE	1	0
NONE					
RT TESTIS					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
TRACHEA					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
VAS DEFERENS					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
URINARY BLADDER					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
AORTA	NUMBER OF ANIMALS IN DOSE GROUP	15	15	15	15
	NUMBER OF ANIMALS EXAMINED WEEK 17	5	5	5	5
	TOTAL NUMBER EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
STERNEBRAE	NUMBER OF ANIMALS EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
OVIDUCTS	NUMBER OF ANIMALS EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
BRAIN	NUMBER OF ANIMALS EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
CECUM	NUMBER OF ANIMALS EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
COLON	NUMBER OF ANIMALS EXAMINED	0	0	0	0
	EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17		5	5	5	5
DUODENUM					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
ESOPHAGUS					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
EYES/OPTIC N.					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
HEART					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
ILEUM					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
JEJUNUM					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO : WIL-136012  
SPONSOR : CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
KIDNEYS	NUMBER OF ANIMALS IN DOSE GROUP NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
LIVER	TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
	-INFLAMMATION, SUBACUTE	0	0	0	0
	MINIMAL	5	5	5	5
	-VACUOLATION, HEPATOCELLULAR	5	3	4	5
	MINIMAL	0	3	4	5
	MILD	NONE	0	1	2
	-NECROSIS	NONE	0	1	1
	MILD	1	0	0	0
LYMPH NODE, MES		NONE	NONE	NONE	NONE
	TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
ADRENAL CORTEX		0	0	0	0
	TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP					
NUMBER OF ANIMALS EXAMINED WEEK 17		15	15	15	15
LUNGS		5	5	5	5
TOTAL NUMBER EXAMINED		5	5	5	5
-EXAMINED, UNREMARKABLE		2	5	4	2
-MINERALIZATION, VASCULAR		2	0	0	2
MINIMAL		2	NONE	NONE	2
-INFLAMMATION, CHRONIC		1	0	0	1
MINIMAL		1	NONE	NONE	1
-HISTIOCYTOSIS, ALVEOLAR		1	0	0	0
MINIMAL		1	NONE	NONE	NONE
-INFLAMMATION, GRANULOMATOUS		0	0	1	2
MINIMAL		NONE	NONE	1	2
MAMMARY GLAND					
TOTAL NUMBER EXAMINED		0	0	0	0
-EXAMINED, UNREMARKABLE		0	0	0	0
ADRENAL MEDULLA					
TOTAL NUMBER EXAMINED		0	0	0	0
-EXAMINED, UNREMARKABLE		0	0	0	0
NERVE, SCIATIC					
TOTAL NUMBER EXAMINED		0	0	0	0
-EXAMINED, UNREMARKABLE		0	0	0	0
1 - 0 MG/KG/DAY	2 - 100 MG/KG/DAY	3 - 300 MG/KG/DAY	4 - 1000 MG/KG/DAY		

PROJECT NO : WIL-196012  
SPONSOR : CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

NUMBER OF ANIMALS IN DOSE GROUP NUMBER OF ANIMALS EXAMINED WEEK 17	FEMALE			
	GROUP:	1	2	3
STOMACH, GLD		15	15	15
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		5	5	5
STOMACH, NONGLD		0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		0	0	0
MARROW, STERN		0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		0	0	0
OVARIES		0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		0	0	0
PANCREAS		0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		0	0	0
PARATHYROID		0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE		0	0	0
1 - 0 MG/KG/DAY      2 - 100 MG/KG/DAY      3 - 300 MG/KG/DAY      4 - 1000 MG/KG/DAY				

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	FEMALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP				
NUMBER OF ANIMALS EXAMINED WEEK 17	15	15	15	15
RECTUM	5	5	5	5
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
PITUITARY	0	0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
SAL. GLAND MAND.	0	0	0	0
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
SKELETAL MUSCLE				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
SKIN				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
SPINAL CORD				
TOTAL NUMBER EXAMINED EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

	FEMALE			
	GROUP:			
	1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP	15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17	5	5	5	5
SPLEEN				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
LYMPH NODE, MAND				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
THYMUS GLAND				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
THYROID GLANDS				
TOTAL NUMBER EXAMINED	5	5	5	5
EXAMINED, UNREMARKABLE	3	3	3	3
-CYST, ULTIMOBRANCHIAL	2	2	2	2
MINIMAL	2	2	1	1
MILD	NONE	NONE	1	1
-HYPERTROPHY, FOLLICULAR CELL	0	0	0	NONE
MINIMAL	NONE	NONE	3	3
TRACHEA				
TOTAL NUMBER EXAMINED	0	0	0	0
EXAMINED, UNREMARKABLE	0	0	0	0
1- 0 MG/KG/DAY	2- 100 MG/KG/DAY	3- 300 MG/KG/DAY	4- 1000 MG/KG/DAY	

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 63 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF MICROSCOPIC FINDINGS

		FEMALE			
		GROUP:			
		1	2	3	4
NUMBER OF ANIMALS IN DOSE GROUP		15	15	15	15
NUMBER OF ANIMALS EXAMINED WEEK 17		5	5	5	5
URINARY BLADDER					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
UTERUS					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
VAGINA					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
CERVIX					
TOTAL NUMBER EXAMINED		0	0	0	0
EXAMINED, UNREMARKABLE		0	0	0	0
1- 0 MG / KG / DAY	2- 100 MG / KG / DAY	3- 300 MG / KG / DAY	4- 1000 MG / KG / DAY		

PHS I2v4.17  
12/11/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 64  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE) - SUMMARY OF MEANS  
HTM-IVOS

		GROUP:			M A L E			F E M A L E		
		0 MG/KG/DAY			100 MG/KG/DAY-SZ			300 MG/KG/DAY-SZ		
		1000 MG/KG/DAY-RZ								
LEFT TESTIS										
WEEK	13	MEAN	109.5	97.4				103.5	97.2	
		S.D.	28.14	13.96				45.08	23.02	
		N	9	10				10	9	
WEEK	17	MEAN	94.1	111.4				78.2	88.6	
		S.D.	23.61	58.55				12.08	16.90	
		N	5	4				5	5	
LEFT EPIDIDYMIS										
WEEK	13	MEAN	658.0	648.9				778.2	640.6	
		S.D.	101.83	122.61				177.63	93.78	
		N	9	10				10	9	
WEEK	17	MEAN	362.7	405.1				410.2	393.6	
		S.D.	34.84	51.68				31.56	74.89	
		N	5	4				5	5	

None significantly different from the control group using Dunnett's test

MANUALV1.0  
09/22/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 65  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY) - SUMMARY OF MEANS  
HTM-IVOS

		GROUP:			M A L E			F E M A L E		
		0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY		
LEFT TESTIS	WEEK	MEAN			100			300		1000
		S.D.			MG/KG/DAY			MG/KG/DAY		MG/KG/DAY
LEFT TESTIS	WEEK	MEAN								
		S.D.								
		N								
LEFT TESTIS	13	18.0			16.0			17.0		15.9
		4.60			2.29			7.38		3.75
		9			10			10		9
LEFT TESTIS	17	15.4			18.3			12.8		14.5
		3.85			9.59			1.97		2.75
		5			4			5		5

None significantly different from the control group using Dunnett's test

A: SPERM PRODUCTION RATE = NUMBER OF SPERM PER GRAM OF TISSUE  
6.1 DAYS

6.1 DAYS = THE RATE OF TURNOVER OF THE GERMINAL EPITHELIUM

MANUAL V1.0  
09/22/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 66  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MOTILITY ASSESSMENT (PERCENTAGE)  
SUMMARY OF MEANS  
HTM-IVOS

GROUP :	0 MG/KG/DAY	100 MG/KG/DAY-SZ			300 MG/KG/DAY-SZ			1000 MG/KG/DAY-SZ			
		M	A	L	E	M	A	L	E	M	A
MOTILE SPERM											
WEEK 13	MEAN	88.0		89.9		89.6		86.2			
	S.D.	2.96		3.04		3.20		3.19			
	N	9		10		10		9			
MOTILE SPERM											
WEEK 17	MEAN	75.2		76.8		73.8		77.2			
	S.D.	11.65		13.90		13.48		9.34			
	N	5		5		5		5			

None significantly different from the control group using Kruskal-Wallis test

PAGE 1  
MANUAL v1.0  
09/22/2000  
R:07/18/2001

TABLE 67  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)  
SUMMARY OF MEANS

GROUP :			0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	MALE	300 MG/KG/DAY	1000 MG/KG/DAY
NORMAL								
WEEK	13	MEAN	99.4	99.4	99.4	99.4	99.4	99.6
		S.D.	0.68	0.75	0.75	0.97	0.97	0.49
		N	9	10	10	10	10	9
WEEK	17	MEAN	98.7	99.0	99.6	99.5	99.5	99.5
		S.D.	1.15	0.94	0.65	0.65	0.50	0.50
		N	5	5	5	5	5	5
NORMALLY SHAPED HEAD SEPARATED FROM FLAGELLUM								
WEEK	13	MEAN	0.6	0.7	0.4	0.4	0.4	0.3
		S.D.	0.68	0.52	0.52	0.52	0.52	0.36
		N	9	10	10	10	10	9
WEEK	17	MEAN	0.9	0.4	0.3	0.1	0.1	0.22
		S.D.	0.82	0.42	0.67	0.67	0.67	0.5
		N	5	5	5	5	5	5
HEAD ABSENT WITH NORMAL FLAGELLUM								
WEEK	13	MEAN	0.0	0.0	0.0	0.2	0.2	0.1
		S.D.	0.00	0.00	0.00	0.48	0.48	0.22
		N	9	10	10	10	10	9
WEEK	17	MEAN	0.4	0.6	0.1	0.4	0.4	0.42
		S.D.	0.55	0.65	0.22	0.42	0.42	0.5
		N	5	5	5	5	5	5

Normal morphology not significantly different from the control group using Kruskal-Wallis test

TABLE 67  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)  
SUMMARY OF MEANS

GROUP :				0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	M A L E	1000 MG/KG/DAY
<b>HEAD ABSENT WITH ABNORMAL FLAGELLUM</b>								
WEEK 13	MEAN	0.0		0.0	0.0	0.0	0.0	0.0
	S.D.	0.00		0.00	0.10	0.10	0.00	0.00
	N	9					10	9
WEEK 17	MEAN	0.0		0.0	0.0	0.0	0.0	0.0
	S.D.	0.00		0.00	0.00	0.00	0.00	0.00
	N	5				5		5
<b>MISSHAPEN HEAD WITH NORMAL FLAGELLUM</b>								
WEEK 13	MEAN	0.0		0.0	0.00	0.00	0.0	0.0
	S.D.	0.00		0.00	0.10	0.10	0.00	0.00
	N	9					10	9
WEEK 17	MEAN	0.0		0.0	0.00	0.00	0.0	0.0
	S.D.	0.00		0.00	0.00	0.00	0.00	0.00
	N	5				5		5
<b>MISSHAPEN HEAD WITH ABNORMAL FLAGELLUM</b>								
WEEK 13	MEAN	0.0		0.0	0.00	0.00	0.0	0.0
	S.D.	0.00		0.00	0.10	0.10	0.00	0.00
	N	9					10	9
WEEK 17	MEAN	0.0		0.0	0.00	0.00	0.0	0.0
	S.D.	0.00		0.00	0.00	0.00	0.00	0.00
	N	5				5		5

TABLE 67  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)  
SUMMARY OF MEANS

GROUP :	0 MG/KG/DAY			100 MG/KG/DAY			300 MG/KG/DAY			1000 MG/KG/DAY		
	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E	M A L E
<b>DEGENERATIVE FLAGELLAR DEFECTS</b>												
WITH NORMAL HEAD												
WEEK 13	MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.											
	N	9		9	10		10	10	10	10	10	9
WEEK 17	MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.											
	N	5		5	5		5	5	5	5	5	5
<b>OTHER FLAGELLAR DEFECTS</b>												
WITH NORMAL HEAD												
WEEK 13	MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.											
	N	9		9	10		10	10	10	10	10	9
WEEK 17	MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.											
	N	5		5	5		5	5	5	5	5	5

MANUALV1.0  
09/21/2000  
R:07/18/2001

PROJECT NO. :WIL-186012  
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TABLE 68  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER) - SUMMARY OF MEANS

GROUP:				0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY
					M A L E		
NORMAL							
WEEK 13	MEAN	198.9	198.7	198.8	199.2		
	S.D.	1.58	1.49	1.93	0.97		
	N	9	10	10	9		
WEEK 17	MEAN	197.4	198.0	199.2	199.0		
	S.D.	2.30	1.87	1.30	1.00		
	N	5	5	5	5		
NORMALLY SHAPED HEAD SEPARATED FROM FLAGELLUM							
WEEK 13	MEAN	1.1	1.3	0.8	0.6		
	S.D.	1.36	1.49	1.03	0.73		
	N	9	10	10	9		
WEEK 17	MEAN	1.8	0.8	0.6	0.2		
	S.D.	1.64	0.84	1.34	0.45		
	N	5	5	5	5		
HEAD ABSENT WITH NORMAL FLAGELLUM							
WEEK 13	MEAN	0.0	0.0	0.4	0.2		
	S.D.	0.00	0.00	0.97	0.44		
	N	9	10	10	9		
WEEK 17	MEAN	0.8	1.2	0.2	0.8		
	S.D.	1.10	1.30	0.45	0.84		
	N	5	5	5	5		

TABLE 68  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER) - SUMMARY OF MEANS

GROUP:			0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	M A L E	1000 MG/KG/DAY
<b>HEAD ABSENT WITH ABNORMAL FLAGELLUM</b>							
WEEK 13	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	9	10	10	10	10	9
WEEK 17	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	5	5	5	5	5	5
<b>MISSHAPEN HEAD WITH NORMAL FLAGELLUM</b>							
WEEK 13	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	9	10	10	10	10	9
WEEK 17	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	5	5	5	5	5	5
<b>MISSHAPEN HEAD WITH ABNORMAL FLAGELLUM</b>							
WEEK 13	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	9	10	10	10	10	9
WEEK 17	MEAN	0.0	0.0	0.0	0.0	0.0	0.0
	S.D.	0.00	0.00	0.00	0.00	0.00	0.00
	N	5	5	5	5	5	5

TABLE 68  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER) - SUMMARY OF MEANS

		GROUP:		0 MG/KG/DAY	100 MG/KG/DAY	300 MG/KG/DAY	1000 MG/KG/DAY		
						M A L E			
<b>DEGENERATIVE FLAGELLAR DEFECTS</b>									
WITH NORMAL HEAD									
WEEK	13	MEAN	0.0	0.0	0.0	0.0	0.0		
		S.D.	0.00	0.00	0.00	0.00	0.00		
		N	9	9	10	10	9		
WEEK	17	MEAN	0.0	0.0	0.0	0.0	0.0		
		S.D.	0.00	0.00	0.00	0.00	0.00		
		N	5	5	5	5	5		
<b>OTHER FLAGELLAR DEFECTS</b>									
WITH NORMAL HEAD									
WEEK	13	MEAN	0.0	0.0	0.0	0.0	0.0		
		S.D.	0.00	0.00	0.00	0.00	0.00		
		N	9	9	10	10	9		
WEEK	17	MEAN	0.0	0.0	0.0	0.0	0.0		
		S.D.	0.00	0.00	0.00	0.00	0.00		
		N	5	5	5	5	5		

MANUALV1.0  
09/22/2000  
R:07/18/2001

**FINAL REPORT**

Volume 2 of 4  
(Individual Tables 69-93)

**STUDY TITLE**

**A 90-DAY ORAL (Gavage) TOXICITY  
STUDY OF HBCD IN RATS**

**STUDY DIRECTOR**

Christopher P. Chengelis, Ph.D., D.A.B.T.

**STUDY INITIATED ON**

March 2, 2000

**STUDY COMPLETION DATE**

December 14, 2001

**PERFORMING LABORATORY**

WIL Research Laboratories, Inc.  
1407 George Road  
Ashland, Ohio 44805-9281

**LABORATORY STUDY NUMBER**

WIL-186012

**SPONSOR**

Chemical Manufacturers Association  
Brominated Flame Retardant Industry Panel (BFRIP)  
1300 Wilson Blvd.  
Arlington, VA 22209

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DAYS ON STUDY
43289 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43295 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43308 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43316 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43326 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43332 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43334 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43336 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43339 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43349 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43365 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43368 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43369 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43379 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43391 M	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43285 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43293 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43311 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43320 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43330 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43342 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43350 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43351 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43354 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43364 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43371 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43380 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43382 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43384 M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL	SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DAYS ON STUDY
43386	M	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
432290	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43307	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43309	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43318	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43322	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43323	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43331	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43341	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43355	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43361	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43363	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43383	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43385	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43388	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43392	M	300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43277	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43278	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43280	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43281	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43282	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43297	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43325	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43328	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43346	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43359	M	1000 MG/KG/DAY	FOUND DEAD	8	07-MAY-00	11
43362	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43372	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DAYS ON STUDY
43373	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00
43377	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00
43397	M	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DATE ON STUDY
43398 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43405 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43409 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43423 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43432 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43433 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43435 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43436 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43438 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43449 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43467 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43474 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43483 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43497 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43501 F	0 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43400 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43407 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43413 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43416 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43419 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43420 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43439 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43458 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43462 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43468 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43486 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43489 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43502 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43511 F	100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DAYS ON STUDY
43515	F 100 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43402	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43426	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43442	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43446	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43461	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43463	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43475	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43478	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43491	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43495	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43496	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43508	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43513	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43516	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43517	F 300 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43401	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43421	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43429	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43430	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	24	23-AUG-00	119
43440	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43456	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43460	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43466	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43477	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43479	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	27-JUL-00	92
43481	F 1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 69  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SURVIVAL AND DISPOSITION

ANIMAL	SEX	GROUP	TYPE OF DEATH	AGE IN WEEKS A	DATE OF DEATH	DAYS ON STUDY
43484	F	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	26-JUL-00	91
43492	F	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93
43503	F	1000 MG/KG/DAY	SCHEDULED EUTHANASIA	20	28-JUL-00	93

A = CALCULATED TO THE NEAREST WHOLE WEEK USING THE MEAN AGE IN WEEKS AT INITIATION OF DOSING (7)

PDEADV4.02  
01/03/2001  
R:07/18/2001

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	MALE GROUP: 0 MG/KG/DAY					
	-1	0	1	2	3	4
ANIMAL						
43289	202.	236.	291.	337.	365.	400.
43295	226.	255.	312.	349.	388.	429.
43308	183.	227.	272.	313.	344.	384.
43316	203.	230.	263.	289.	320.	349.
43326	176.	213.	256.	294.	322.	347.
43332	233.	272.	329.	367.	406.	439.
43334	209.	243.	301.	340.	369.	406.
43336	201.	232.	284.	319.	346.	370.
43339	208.	243.	288.	330.	360.	391.
43349	198.	239.	292.	335.	370.	405.
43365	211.	248.	301.	336.	362.	405.
43368	225.	269.	328.	375.	420.	453.
43369	216.	256.	313.	354.	379.	426.
43379	209.	246.	303.	346.	380.	426.
43391	192.	234.	287.	290.	336.	371.
MEAN	206.	243.	295.	332.	364.	403.
S.D.	15.5	15.7	21.3	26.4	28.3	42.7.
N	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	MALE GROUP: 100 MG/KG/DAY					
	-1	0	1	2	3	4
ANIMAL						
43285	228.	253.	304.	344.	382.	424.
43293	209.	247.	303.	357.	401.	428.
43311	200.	236.	288.	323.	356.	386.
43320	203.	237.	275.	303.	333.	362.
43340	173.	218.	218.	243.	265.	281.
43342	199.	237.	288.	326.	362.	389.
43350	222.	257.	306.	342.	366.	398.
43351	206.	240.	289.	330.	352.	383.
43354	196.	236.	291.	308.	348.	379.
43364	183.	218.	263.	308.	340.	369.
43371	209.	250.	310.	360.	397.	424.
43380	213.	250.	305.	350.	386.	424.
43382	215.	250.	304.	335.	362.	380.
43384	244.	289.	351.	404.	439.	464.
43386	201.	233.	285.	326.	356.	372.
MEAN	207.	243.	292.	331.	363.	390.
S.D.	17.2	17.1	28.4	35.1	38.5	41.1
N	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	-1	0	1	2	MALE GROUP: 300 MG/KG/DAY		5	6
					3	4		
ANIMAL								
43290	193.	215.	271.	294.	330.	370.	379.	403.
43307	201.	237.	300.	350.	390.	418.	447.	479.
43309	238.	280.	336.	387.	434.	471.	499.	534.
43318	215.	257.	316.	369.	393.	430.	464.	489.
43322	199.	232.	281.	315.	337.	360.	385.	412.
43323	180.	213.	262.	291.	323.	342.	366.	381.
43331	209.	243.	298.	340.	377.	414.	434.	463.
43341	209.	246.	303.	344.	383.	417.	442.	469.
43355	202.	239.	284.	321.	347.	390.	422.	456.
43361	229.	273.	337.	387.	425.	452.	490.	525.
43363	186.	222.	271.	311.	345.	360.	384.	414.
43383	203.	239.	290.	334.	361.	379.	407.	434.
43385	207.	236.	288.	326.	362.	388.	413.	451.
43388	223.	264.	321.	358.	402.	420.	455.	481.
43392	211.	247.	303.	342.	362.	388.	418.	448.
MEAN	207.	243.	297.	338.	371.	400.	427.	456.
S.D.	15.3	19.4	22.8	29.5	33.3	36.0	39.9	43.1
N	15	15	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

ANIMAL	WEEK	MALE			FEMALE		
		1	2	3	4	5	6
43277	-1	213.	267.	315.	359.	394.	429.
43278	203.	236.	293.	341.	371.	409.	431.
43280	211.	248.	312.	367.	408.	445.	468.
43281	198.	243.	287.	321.	354.	385.	416.
43282	180.	212.	255.	286.	309.	332.	351.
43297	209.	244.	295.	346.	382.	420.	445.
43325	200.	236.	292.	334.	354.	383.	402.
43328	230.	243.	295.	332.	364.	393.	418.
43346	204.	238.	291.	328.	342.	373.	392.
43359	217.	254.	316.	337.	368.	385.	412.
43362	201.	243.	292.	328.	422.	447.	486.
43372	222.	264.	328.	378.	422.	447.	486.
43373	186.	218.	269.	313.	333.	352.	376.
43377	211.	248.	297.	325.	355.	371.	400.
43397	231.	269.	336.	379.	411.	433.	451.
MEAN	206.	241.	295.	336.	367.	394.	420.
S.D.	15.1	16.5	21.8	25.7	31.1	33.6	36.9
N	15	15	15	15	14	14	14

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS

ANIMAL	WEEK	INDIVIDUAL BODY WEIGHTS (GRAMS)				MALE GROUP: 0 MG/KG/DAY	13	14
		7	8	9	10			
43289	489.	510.	524.	540.	553.	566.	569.	571.
43295	496.	514.	528.	551.	561.	581.	586.	590.
43308	461.	484.	509.	528.	540.	564.	561.	570.
43316	426.	447.	463.	478.	492.	499.	506.	512.
43326	424.	447.	457.	474.	480.	497.	504.	496.
43332	500.	522.	529.	554.	558.	562.	567.	SCHEDULED EUTH WEEK 13
43334	471.	484.	499.	515.	534.	546.	550.	SCHEDULED EUTH WEEK 13
43336	421.	431.	441.	451.	458.	472.	472.	SCHEDULED EUTH WEEK 13
43339	468.	482.	502.	517.	536.	559.	565.	SCHEDULED EUTH WEEK 13
43349	468.	479.	500.	516.	531.	540.	560.	SCHEDULED EUTH WEEK 13
43365	449.	463.	483.	489.	503.	514.	522.	SCHEDULED EUTH WEEK 13
43368	538.	559.	577.	588.	601.	612.	628.	SCHEDULED EUTH WEEK 13
43369	456.	472.	484.	497.	508.	524.	531.	SCHEDULED EUTH WEEK 13
43379	470.	478.	504.	512.	526.	539.	542.	SCHEDULED EUTH WEEK 13
43391	449.	464.	475.	491.	509.	527.	540.	SCHEDULED EUTH WEEK 13
MEAN	466.	482.	498.	513.	526.	540.	547.	548.
S.D.	31.5	33.0	33.9	35.5	35.9	36.1	37.6	41.2
N	15	15	15	15	15	15	15	5

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	7	8	9	10	MALE		GROUP: 100 MG/KG/DAY		13	14
					11	12	11	12		
<b>ANIMAL</b>										
43285	493.	519.	536.	556.	576.	610.	620.	620.		
43293	496.	512.	535.	559.	574.	598.	598.	590.		
43311	445.	461.	474.	477.	484.	498.	498.	489.		
43320	430.	441.	450.	458.	468.	484.	484.	486.		
43340	330.	347.	355.	368.	379.	395.	395.	387.		
43342	465.	485.	500.	514.	524.	538.	538.	542.		
43350	475.	503.	522.	548.	561.	581.	581.	584.		
43351	455.	474.	490.	497.	508.	521.	521.	530.		
43354	436.	454.	467.	477.	488.	492.	492.	496.		
43364	436.	463.	476.	494.	510.	526.	526.	528.		
43371	493.	510.	527.	545.	550.	564.	564.	571.		
43380	494.	515.	529.	545.	560.	579.	579.	574.		
43382	471.	490.	505.	522.	526.	546.	546.	556.		
43384	546.	569.	582.	604.	616.	642.	642.	650.		
43386	432.	451.	462.	475.	491.	498.	498.	501.		
MEAN	460.	480.	494.	509.	521.	538.	538.	540.		
S.D.	48.1	49.8	52.2	56.1	57.0	61.5	66.3	92.9		
N	15	15	15	15	15	15	15	5		

TABLE 70  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	7	8	9	10	MALE	GROUP: 300 MG/KG/DAY			14
						11	12	13	
<b>ANIMAL</b>									
43290	422.	440.	451.	474.	488.	505.	501.	496.	
43307	498.	514.	529.	547.	564.	562.	566.	560.	
43309	556.	572.	596.	603.	623.	636.	633.	627.	
43318	506.	515.	532.	555.	570.	584.	582.	587.	
43322	422.	437.	450.	461.	478.	506.	501.	502.	
43323	393.	409.	417.	424.	432.	442.	453.		EUTH WEEK 13
43331	481.	493.	505.	515.	527.	541.	550.		SCHEDULED EUTH WEEK 13
43341	485.	490.	509.	522.	535.	545.	557.		SCHEDULED EUTH WEEK 13
43355	471.	501.	520.	535.	549.	572.	587.		SCHEDULED EUTH WEEK 13
43361	549.	571.	583.	607.	643.	654.	670.		SCHEDULED EUTH WEEK 13
43363	435.	445.	462.	475.	493.	510.	507.		SCHEDULED EUTH WEEK 13
43383	446.	476.	487.	499.	516.	527.	539.		SCHEDULED EUTH WEEK 13
43385	455.	479.	508.	521.	539.	553.	562.		SCHEDULED EUTH WEEK 13
43388	502.	523.	545.	559.	581.	599.	596.		SCHEDULED EUTH WEEK 13
43392	455.	470.	485.	500.	508.	519.	529.		SCHEDULED EUTH WEEK 13
MEAN	472.	489.	505.	520.	536.	550.	556.		
S.D.	46.2	46.5	49.1	50.6	55.3	54.3	55.0		
N	15	15	15	15	15	15	15		

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

ANIMAL	WEEK	MALE				GROUP: 1000 MG/KG/DAY	13	14
		7	8	9	10			
43277	469.	483.	492.	497.	512.	523.	515.	515.
43278	480.	490.	502.	500.	514.	528.	510.	497.
43280	523.	540.	560.	572.	584.	591.	594.	590.
43281	461.	478.	496.	509.	515.	528.	518.	530.
43282	375.	382.	385.	397.	401.	418.	418.	410.
43297	477.	492.	508.	517.	522.	538.	540.	SCHEDULED EUTH WEEK 13
43325	441.	448.	460.	463.	466.	476.	481.	SCHEDULED EUTH WEEK 13
43328	455.	464.	479.	495.	509.	518.	523.	SCHEDULED EUTH WEEK 13
43346	420.	427.	438.	437.	442.	452.	451.	SCHEDULED EUTH WEEK 13
43362	455.	470.	486.	497.	496.	511.	517.	SCHEDULED EUTH WEEK 13
43372	539.	557.	573.	592.	603.	623.	617.	SCHEDULED EUTH WEEK 13
43373	406.	410.	414.	425.	435.	449.	431.	SCHEDULED EUTH WEEK 13
43377	434.	446.	463.	469.	480.	495.	494.	SCHEDULED EUTH WEEK 13
43397	489.	505.	514.	529.	533.	549.	557.	SCHEDULED EUTH WEEK 13
MEAN	459.	471.	484.	493.	501.	514.	512.	508.
S.D.	43.5	47.3	50.8	53.1	54.7	56.3	56.3	55.2
N	14	14	14	14	14	14	14	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	15	16	17	17	MALE	GROUP:	0 MG./KG./DAY
ANIMAL					SCHEDULED	EUTH	WEEK 17
43289	589.	593.	596.		603.	EUTH	WEEK 17
43295	591.	597.	596.		596.	EUTH	WEEK 17
43308	577.	584.	548.		548.	EUTH	WEEK 17
43316	521.	533.	547.		547.	EUTH	WEEK 17
43326	523.	534.					
MEAN	560.	568.	578.				
S.D.	35.3	32.0	28.0				
N	5	5	5				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	15	16	17	MALE GROUP: 100 MG/KG/DAY
ANIMAL				SCHEDULED EUTH WEEK 17
43285	621.	627.	639.	SCHEDULED EUTH WEEK 17
43293	586.	595.	605.	SCHEDULED EUTH WEEK 17
43311	495.	499.	510.	SCHEDULED EUTH WEEK 17
43320	496.	495.	508.	SCHEDULED EUTH WEEK 17
43340	396.	400.	411.	SCHEDULED EUTH WEEK 17
MEAN	519.	523.	535.	
S.D.	88.2	90.1	90.1	
N	5	5	5	

PROJECT NO :WIL-186612  
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TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

	WEEK	15	16	17	
ANIMAL					MALE GROUP : 300 MG/KG/DAY
43290	501.	501.	504.	SCHEDULED EUTH WEEK 17	
43307	559.	568.	575.	SCHEDULED EUTH WEEK 17	
43309	626.	625.	638.	SCHEDULED EUTH WEEK 17	
43318	601.	609.	604.	SCHEDULED EUTH WEEK 17	
43322	510.	514.	529.	SCHEDULED EUTH WEEK 17	
MEAN	559.	563.	570.		
S.D.	54.8	55.3	54.4		
N	5	5	5		

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

	WEEK	15	16	17		
ANIMAL					SCHEDULED	EUTH WEEK 17
43277	519.	521.	526.		SCHEDULED	EUTH WEEK 17
43278	506.	511.	509.		SCHEDULED	EUTH WEEK 17
43280	608.	616.	630.		SCHEDULED	EUTH WEEK 17
43281	541.	539.	556.		SCHEDULED	EUTH WEEK 17
43282	411.	422.	438.		SCHEDULED	EUTH WEEK 17
MEAN	517.	522.	532.			
S.D.	71.1	69.4	70.0			
N	5	5	5			

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	-1	0	1	2	3	4	FEMALE GROUP: 0 MG/KG/DAY		5	6
ANIMAL										
43398	138.	161.	183.	203.	220.	231.	231.	231.	243.	
43405	178.	196.	237.	243.	274.	291.	298.	298.	316.	
43409	156.	168.	195.	202.	230.	243.	243.	243.	252.	
43423	152.	171.	194.	208.	225.	238.	243.	243.	252.	
43432	163.	190.	224.	226.	250.	262.	286.	286.	291.	
43433	168.	182.	218.	245.	241.	267.	272.	272.	279.	
43435	159.	182.	232.	244.	255.	271.	281.	281.	294.	
43436	172.	193.	217.	229.	247.	262.	271.	271.	277.	
43438	165.	187.	208.	225.	235.	257.	260.	260.	266.	
43449	147.	165.	192.	206.	225.	237.	243.	243.	253.	
43467	192.	203.	226.	245.	259.	271.	283.	283.	287.	
43474	136.	157.	176.	187.	201.	208.	213.	213.	217.	
43483	139.	161.	189.	192.	203.	216.	233.	233.	246.	
43497	159.	173.	200.	215.	235.	241.	259.	259.	267.	
43501	160.	185.	205.	229.	240.	251.	262.	262.	279.	
MEAN	159.	178.	205.	220.	236.	250.	259.	259.	268.	
S.D.	15.4	14.2	17.3	19.7	19.9	22.2	23.6	23.6	24.8	
N	15	15	15	15	15	15	15	15	15	

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

ANIMAL	WEEK	-1	0	1	FEMALE GROUP: 100 MG/KG/DAY			5	6
					3	2	4		
43400	179.	200.	224.	257.	261.	269.	290.	291.	291.
43407	157.	168.	191.	206.	214.	229.	232.	238.	238.
43413	153.	169.	178.	209.	228.	241.	264.	295.	295.
43416	155.	168.	193.	217.	234.	244.	265.	274.	274.
43419	149.	164.	183.	205.	209.	222.	230.	236.	236.
43420	161.	173.	196.	214.	224.	227.	238.	249.	249.
43439	134.	152.	192.	203.	210.	224.	238.	254.	254.
43458	145.	154.	180.	192.	199.	217.	223.	236.	236.
43462	138.	156.	178.	187.	195.	206.	208.	211.	211.
43468	171.	184.	220.	239.	249.	255.	272.	281.	281.
43486	164.	180.	216.	236.	247.	255.	268.	267.	267.
43489	188.	205.	233.	240.	252.	268.	273.	280.	280.
43502	159.	178.	204.	214.	228.	238.	247.	257.	257.
43511	167.	193.	211.	233.	244.	257.	265.	282.	282.
43515	165.	190.	220.	242.	262.	267.	278.	287.	287.
MEAN	159.	176.	201.	220.	230.	241.	253.	263.	263.
S.D.	14.5	16.4	18.3	20.4	21.8	20.1	23.6	24.8	24.8
N	15	15	15	15	15	15	15	15	15

TABLE 70  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	FEMALE GROUP: 300 MG/KG/DAY					
	-1	0	1	2	3	4
ANIMAL						
43402	189.	201.	224.	242.	255.	267.
43426	145.	155.	172.	193.	202.	203.
43442	158.	181.	213.	218.	242.	246.
43446	138.	153.	177.	185.	190.	206.
43461	168.	185.	213.	230.	242.	252.
43463	136.	154.	179.	189.	205.	219.
43475	154.	172.	210.	235.	248.	266.
43478	159.	181.	230.	240.	265.	290.
43491	161.	184.	212.	231.	254.	271.
43495	150.	174.	192.	221.	220.	241.
43496	174.	192.	224.	251.	268.	269.
43508	152.	177.	193.	222.	235.	245.
43513	164.	190.	213.	246.	258.	261.
43516	169.	196.	216.	241.	253.	259.
43517	162.	180.	206.	224.	231.	247.
MEAN	159.	178.	205.	225.	238.	249.
S.D.	13.8	14.8	18.1	20.8	23.9	24.5
N	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	FEMALE GROUP: 1000 MG/KG/DAY					
	-1	0	1	2	3	4
ANIMAL						
43401	181.	198.	241.	277.	278.	299.
43410	137.	154.	177.	189.	208.	213.
43421	171.	188.	221.	243.	253.	264.
43429	160.	179.	201.	218.	224.	246.
43430	169.	184.	219.	243.	255.	258.
43440	146.	161.	194.	214.	239.	244.
43456	178.	197.	237.	271.	282.	311.
43460	141.	152.	166.	188.	194.	206.
43466	162.	184.	217.	237.	258.	288.
43477	165.	183.	214.	220.	229.	235.
43479	157.	182.	224.	255.	247.	262.
43481	162.	174.	198.	235.	260.	267.
43484	156.	165.	195.	217.	228.	253.
43492	152.	168.	198.	214.	225.	232.
43503	130.	147.	176.	189.	197.	212.
MEAN	158.	174.	205.	227.	238.	250.
S.D.	14.6	16.0	22.1	27.9	26.8	31.4
N	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	7	8	9	10	FEMALE GROUP: 0 MG/KG/DAY			13	14
					11	12	11		
<b>ANIMAL</b>									
43398	237.	246.	249.	256.	254.	264.	257.	261.	
43405	324.	328.	335.	340.	334.	348.	340.	337.	
43409	271.	274.	277.	278.	292.	291.	288.	283.	
43423	261.	269.	269.	272.	277.	281.	276.	280.	
43432	290.	286.	299.	301.	304.	319.	313.	309.	
43433	278.	290.	297.	299.	297.	311.	310.	SCHEDULED	EUTH WEEK 13
43435	299.	304.	310.	317.	323.	329.	330.	SCHEDULED	EUTH WEEK 13
43436	288.	296.	299.	300.	310.	316.	316.	SCHEDULED	EUTH WEEK 13
43438	268.	277.	278.	280.	283.	292.	292.	SCHEDULED	EUTH WEEK 13
43449	253.	261.	264.	264.	272.	274.	275.	SCHEDULED	EUTH WEEK 13
43467	289.	295.	291.	298.	291.	310.	308.	SCHEDULED	EUTH WEEK 13
43474	225.	233.	233.	233.	229.	239.	244.	SCHEDULED	EUTH WEEK 13
43483	251.	260.	268.	267.	274.	284.	287.	SCHEDULED	EUTH WEEK 13
43497	283.	277.	288.	301.	305.	302.	308.	SCHEDULED	EUTH WEEK 13
43501	292.	296.	297.	308.	299.	303.	312.	SCHEDULED	EUTH WEEK 13
MEAN	274.	279.	284.	287.	290.	298.	297.	294.	
S.D.	25.6	24.0	25.2	27.5	24.9	26.5	26.7	29.5	
N	15	15	15	15	15	15	15	5	

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	ANIMAL	FEMALE GROUP: 100 MG/KG/DAY						14
		7	8	9	10	11	12	
1	43400	299.	307.	303.	321.	325.	337.	328.
	43407	239.	247.	246.	249.	256.	261.	242.
	43413	289.	292.	297.	293.	304.	306.	295.
	43416	280.	288.	297.	304.	304.	309.	305.
	43419	238.	239.	242.	246.	251.	247.	244.
	43420	252.	255.	264.	264.	268.	272.	266.
	43439	266.	259.	270.	274.	277.	286.	284.
	43459	240.	236.	241.	245.	246.	254.	253.
	43458	240.	224.	220.	227.	233.	236.	238.
	43462	220.	282.	284.	291.	285.	291.	305.
	43468	282.	277.	287.	284.	297.	308.	311.
	43486	277.	288.	298.	299.	297.	308.	314.
	43489	288.	278.	281.	280.	281.	290.	289.
	43502	271.	293.	297.	311.	310.	321.	324.
	43511	287.	300.	308.	308.	315.	325.	331.
	43515	299.						
MEAN		268.	272.	276.	280.	285.	292.	291.
S.D.		24.8	26.7	27.4	28.3	28.7	31.0	32.6
N		15	15	15	15	15	15	15

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	7	8	9	FEMALE GROUP: 300 MG/KG/DAY					14
				10	11	12	13		
<b>ANIMAL</b>									
43402	296.	309.	313.	311.	322.	335.	325.	329.	
43426	232.	241.	248.	251.	253.	257.	246.	249.	
43442	269.	283.	280.	291.	298.	302.	307.	297.	
43446	220.	222.	232.	235.	234.	241.	234.	240.	
43461	275.	291.	305.	320.	318.	328.	318.	329.	
43463	241.	238.	245.	251.	253.	261.	251.	251.	SCHEDULED EUTH WEEK 13
43475	288.	292.	306.	302.	312.	320.	319.	319.	SCHEDULED EUTH WEEK 13
43478	333.	329.	337.	349.	358.	372.	377.	377.	SCHEDULED EUTH WEEK 13
43491	294.	294.	307.	307.	312.	327.	320.	320.	SCHEDULED EUTH WEEK 13
43495	269.	274.	279.	285.	282.	292.	298.	298.	SCHEDULED EUTH WEEK 13
43496	302.	314.	330.	327.	328.	336.	333.	333.	SCHEDULED EUTH WEEK 13
43508	273.	281.	279.	281.	287.	292.	287.	287.	SCHEDULED EUTH WEEK 13
43513	296.	304.	296.	313.	317.	319.	316.	316.	SCHEDULED EUTH WEEK 13
43516	286.	290.	297.	305.	310.	315.	320.	320.	SCHEDULED EUTH WEEK 13
43517	269.	262.	275.	281.	285.	290.	291.	291.	SCHEDULED EUTH WEEK 13
MEAN	276.	282.	289.	294.	298.	306.	303.	284.	
S.D.	29.0	29.9	30.3	30.9	32.8	34.6	37.1	38.1	
N	15	15	15	15	15	15	15	5	

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 1000 MG/KG/DAY						
		7	8	9	10	11	12	13
43401	333.	333.	337.	348.	357.	370.	364.	355.
43410	234.	233.	241.	248.	251.	261.	251.	246.
43421	294.	308.	312.	321.	325.	336.	336.	318.
43429	265.	281.	285.	295.	299.	305.	304.	292.
43430	284.	276.	284.	292.	289.	292.	295.	291.
43440	259.	266.	277.	284.	276.	276.	292.	276.
43456	341.	346.	365.	372.	383.	393.	386.	SCHEDULED
43460	232.	240.	242.	246.	245.	250.	252.	SCHEDULED
43466	300.	304.	310.	318.	315.	340.	346.	SCHEDULED
43477	248.	261.	263.	265.	278.	286.	284.	SCHEDULED
43479	276.	280.	292.	291.	292.	293.	293.	EUTH WEEK 13
43481	283.	309.	326.	326.	337.	356.	356.	SCHEDULED
43484	266.	277.	276.	287.	288.	297.	299.	SCHEDULED
43492	254.	260.	265.	268.	270.	269.	273.	SCHEDULED
43503	241.	250.	258.	257.	270.	274.	276.	SCHEDULED
MEAN	274.	282.	289.	295.	298.	307.	307.	300.
S.D.	32.9	32.8	35.4	36.6	38.7	42.7	41.1	40.0
N	15	15	15	15	15	15	15	5

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK	FEMALE GROUP: 0 MG/KG/DAY		
	15	16	17
ANIMAL			
43398	258.	260.	263.
43405	348.	346.	353.
43409	284.	288.	290.
43423	284.	287.	297.
43432	314.	318.	326.
MEAN	298.	300.	306.
S.D.	34.4	33.0	34.6
N	5	5	5

TABLE 70  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 100 MG/KG/DAY

WEEK	15	16	17	
ANIMAL				SCHEDULED EUTH WEEK 17
43400	335.	339.	338.	SCHEDULED EUTH WEEK 17
43407	238.	254.	274.	SCHEDULED EUTH WEEK 17
43413	303.	295.	308.	SCHEDULED EUTH WEEK 17
43416	312.	314.	312.	SCHEDULED EUTH WEEK 17
43419	256.	262.	264.	SCHEDULED EUTH WEEK 17
MEAN	289.	293.	299.	
S.D.	40.4	35.5	30.1	
N	5	5	5	

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 300 MG/KG/DAY

WEEK	15	16	17	
ANIMAL				SCHEDULED EUTH WEEK 17
43402	339.	345.	347.	SCHEDULED EUTH WEEK 17
43426	256.	252.	259.	SCHEDULED EUTH WEEK 17
43442	300.	303.	299.	SCHEDULED EUTH WEEK 17
43446	242.	239.	252.	SCHEDULED EUTH WEEK 17
43461	313.	314.	326.	SCHEDULED EUTH WEEK 17
MEAN	290.	291.	297.	
S.D.	40.3	44.2	41.3	
N	5	5	5	

TABLE 70  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

	WEEK	15	16	17
ANIMAL				
43401	356.	356.	355.	SCHEDULED
43410	241.	247.	246.	EUTH WEEK 17
43421	323.	323.	326.	SCHEDULED
43429	299.	298.	304.	EUTH WEEK 17
43430	292.	296.	311.	SCHEDULED
MEAN	302.	304.	308.	
S.D.	42.4	40.0	40.0	
N	5	5	5	

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE							MALE GROUP: 0 MG/KG/DAY												
		-1	TO	0	TO	1	TO	2	TO	2	TO	3	TO	4	TO	5	5	TO	6	TO	7
43289	34.	55.	46.	28.	35.	31.	30.	28.													
43295	29.	57.	37.	39.	41.	23.	19.	25.													
43308	44.	45.	41.	40.	33.	25.	19.	24.													
43316	27.	33.	26.	31.	29.	21.	32.	24.													
43326	37.	43.	38.	28.	25.	25.	35.	17.													
43332	39.	57.	38.	39.	33.	24.	24.	13.													
43334	34.	58.	39.	29.	37.	29.	21.	15.													
43336	31.	52.	35.	27.	20.	22.	20.	13.													
43339	35.	45.	42.	30.	31.	27.	29.	21.													
43349	41.	53.	43.	35.	35.	21.	27.	15.													
43365	37.	53.	35.	26.	17.	22.	28.	20.													
43368	44.	59.	47.	45.	25.	36.	32.	25.													
43369	40.	57.	41.	25.	14.	24.	20.	19.													
43379	37.	57.	43.	34.	24.	30.	20.	16.													
43391	42.	53.	3.	46.	35.	32.	24.	22.													
MEAN	37.	52.	37.	33.	29.	27.	26.	19.													
S.D.	5.2	7.3	10.7	6.7	8.3	4.9	5.2	4.7													
N	15	15	15	15	15	15	15	15													

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE							FEMALE								
		-1	TO	0	TO	1	TO	2	TO	3	TO	4	TO	5	TO	6	TO	7
43285	25.	51.	40.	38.	42.	31.	27.	11.									
43293	38.	56.	54.	44.	27.	26.	27.	15.									
43311	36.	52.	35.	33.	30.	23.	24.	12.									
43320	34.	38.	28.	30.	29.	25.	27.	16.									
43340	45.	0.	25.	22.	16.	22.	16.	11.									
43342	38.	51.	38.	36.	27.	35.	24.	17.									
43350	35.	49.	36.	24.	32.	37.	21.	19.									
43351	34.	49.	41.	22.	31.	27.	21.	19.									
43354	40.	55.	17.	40.	31.	20.	25.	20.									
43364	35.	45.	45.	32.	29.	24.	30.	13.									
43371	41.	60.	50.	37.	27.	23.	30.	16.									
43380	37.	55.	45.	36.	29.	30.	28.	21.									
43382	35.	54.	31.	27.	18.	36.	25.	30.									
43384	45.	62.	53.	35.	25.	32.	28.	22.									
43386	32.	52.	41.	30.	16.	22.	25.	13.									
MEAN	37.	49.	39.	32.	27.	28.	25.										
S.D.	5.0	14.6	10.4	6.6	6.7	5.6	3.5										
N	15	15	15	15	15	15	15										

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE							FEMALE																
		-1	TO	0	0	TO	1	1	TO	2	2	TO	3	3	TO	4	4	TO	5	5	TO	6	6	TO	7
43290	22.	56.	23.						36.				40.						9.			24.			
43307	36.	63.	50.						40.				28.						29.			32.			
43309	42.	56.	51.						47.				37.						28.			35.			
43318	42.	59.	53.						24.				37.						34.			25.			
43322	33.	49.	34.						22.				23.						25.			27.			
43323	33.	49.	29.						32.				19.						24.			24.			
43331	34.	55.	42.						37.				37.						20.			29.			
43341	37.	57.	41.						39.				34.						25.			27.			
43355	37.	45.	37.						26.				43.						32.			34.			
43361	44.	64.	50.						38.				27.						38.			35.			
43363	36.	49.	40.						34.				15.						24.			24.			
43383	36.	51.	44.						27.				18.						24.			30.			
43385	29.	52.	38.						36.				26.						28.			27.			
43388	41.	57.	37.						44.				18.						25.			38.			
43392	36.	56.	39.						20.				26.						35.			26.			
MEAN	36.	55.	41.						33.				29.						30.			30.			
S.D.	5.5	5.4	8.3						8.1				9.0						15			5.7			
N	15	15	15						15				15						15			5.8			

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE							FEMALE								
		-1	TO	0	TO	1	TO	2	TO	3	TO	4	TO	5	TO	6	TO	7
43277	26.	54.	48.	44.	35.	35.	35.	21.	19.								
43278	33.	57.	48.	30.	38.	22.	37.	12.									
43280	37.	64.	55.	41.	37.	32.	35.	11.									
43281	45.	44.	34.	33.	31.	31.	28.	17.									
43282	32.	43.	31.	23.	23.	19.	18.	6.									
43297	35.	51.	51.	36.	38.	25.	16.	16.									
43325	36.	56.	42.	20.	29.	19.	26.	13.									
43328	13.	52.	37.	32.	29.	25.	24.	13.									
43346	34.	53.	37.	14.	31.	19.	19.	9.									
43359	37.	62.	FOUND	DEAD	WEEK	1											
43362	42.	49.	45.	31.	17.	27.	23.	20.									
43372	42.	64.	50.	44.	25.	39.	33.	20.									
43373	32.	51.	44.	20.	19.	24.	21.	9.									
43377	37.	49.	28.	30.	16.	29.	23.	11.									
43397	38.	67.	43.	32.	22.	18.	27.	11.									
MEAN	35.	54.	42.	31.	28.	26.	25.	13.									
S.D.	7.6	7.3	8.0	9.1	7.7	6.5	6.4	4.4									
N	15	15	14	14	14	14	14	14									

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE					GROUP: 0 MG/KG/DAY					TO 15				
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15	15	16	17	18	19	20	21
43289	21.	14.	14.	16.	13.	13.	13.	3.	2.	18.						
43295	18.	14.	23.	10.	20.	5.	4.									1.
43308	23.	25.	19.	12.	24.	-3.	9.									7.
43316	21.	16.	15.	14.	7.	7.	6.									9.
43326	23.	10.	17.	6.	17.	7.	7.									27.
43332	22.	7.	25.	4.	4.	4.	4.	5.								
43334	13.	15.	16.	19.	12.	14.	4.									
43336	10.	10.	10.	7.	14.	0.	0.									
43339	14.	20.	15.	19.	23.	6.	6.									
43349	11.	21.	16.	15.	9.	20.										
43365	14.	20.	6.	14.	11.	8.										
43368	21.	18.	11.	13.	11.	16.	16.									
43369	16.	12.	13.	11.	16.	7.	7.									
43379	8.	26.	8.	14.	13.	3.	3.									
43391	15.	11.	16.	18.	18.	13.	13.									
MEAN	17.	16.	15.	14.	7.											
S.D.	5.0	5.6	5.1	4.5	5.6											
N	15	15	15	15	15	15	15	15	15	5	6.5	10.2				5

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE GROUP: 100 MG/KG/DAY						
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15
43285	26.	17.	20.	20.	34.	10.	0.	1.
43293	16.	23.	24.	15.	24.	0.	-8.	-4.
43311	16.	13.	3.	7.	14.	-5.	-4.	6.
43320	11.	9.	8.	10.	16.	-11.	13.	10.
43340	17.	8.	13.	11.	16.	-13.	5.	9.
43342	20.	15.	14.	10.	14.	4.	SCHEDULED EUTH WEEK 13	
43350	28.	19.	26.	13.	20.	3.	SCHEDULED EUTH WEEK 13	
43351	19.	16.	7.	11.	13.	9.	SCHEDULED EUTH WEEK 13	
43354	18.	13.	10.	11.	4.	4.	SCHEDULED EUTH WEEK 13	
43364	27.	13.	18.	16.	16.	2.	SCHEDULED EUTH WEEK 13	
43371	17.	17.	18.	5.	14.	7.	SCHEDULED EUTH WEEK 13	
43380	21.	14.	16.	15.	19.	-5.	SCHEDULED EUTH WEEK 13	
43382	19.	15.	17.	4.	20.	10.	SCHEDULED EUTH WEEK 13	
43384	23.	13.	22.	12.	26.	8.	SCHEDULED EUTH WEEK 13	
43386	19.	11.	13.	16.	7.	3.	SCHEDULED EUTH WEEK 13	
MEAN	20.	14.	15.	12.	17.	2.	1.	
S.D.	4.6	3.8	6.5	4.3	7.3	7.3	8.2	5.9
N	15	15	15	15	15	15	5	5

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE GROUP: 300 MG/KG/DAY									
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15		
43290	18.	11.	23.	14.	17.	-4.	-5.				
43307	16.	15.	18.	17.	-2.	4.	-6.	-1.			
43309	16.	24.	7.	20.	13.	-3.	-6.	-1.			
43318	9.	17.	23.	15.	14.	-2.	5.	14.			
43322	15.	13.	11.	17.	28.	-5.	1.	8.			
43323	16.	8.	7.	8.	10.	11.	SCHEDULED	EUTH	WEEK	13	
43331	12.	12.	10.	12.	14.	9.	SCHEDULED	EUTH	WEEK	13	
43341	5.	19.	13.	13.	10.	12.	SCHEDULED	EUTH	WEEK	13	
43355	30.	19.	15.	14.	23.	15.	SCHEDULED	EUTH	WEEK	13	
43361	22.	12.	24.	36.	11.	16.	SCHEDULED	EUTH	WEEK	13	
43363	10.	17.	13.	18.	17.	-3.	SCHEDULED	EUTH	WEEK	13	
43383	30.	11.	12.	17.	11.	12.	SCHEDULED	EUTH	WEEK	13	
43385	24.	29.	13.	18.	14.	9.	SCHEDULED	EUTH	WEEK	13	
43388	21.	22.	14.	22.	18.	-3.	SCHEDULED	EUTH	WEEK	13	
43392	15.	15.	15.	8.	11.	10.	SCHEDULED	EUTH	WEEK	13	
MEAN	17.	16.	15.	17.	14.	5.					
S.D.	7.2	5.6	5.4	6.7	6.7	-2.					
N	15	15	15	15	15	5	5	5	5	5	5

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	MALE GROUP: 1000 MG/KG/DAY												
		7 TO 8	8 TO 9	9 TO 10	9 TO 11	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15	SCHEDULED	EUTH	WEEK	
43277	14.	9.	5.	15.	11.	-8.	0.	-8.	0.	4.	1.	-13.	9.	
43278	10.	12.	-2.	14.	14.	-18.	-13.	-18.	-4.	18.	-4.	-10.	11.	
43280	17.	20.	12.	12.	7.	3.	-10.	12.	-8.	11.	-8.	-10.	11.	
43281	17.	18.	13.	6.	13.	-10.	12.	12.	1.	1.	1.	-10.	11.	
43282	7.	3.	12.	4.	17.	0.	-8.	-8.	-8.	1.	-8.	-10.	11.	
43297	15.	16.	9.	5.	16.	2.	2.	2.	2.	13.	2.	2.	13.	
43325	7.	12.	3.	3.	10.	5.	5.	5.	5.	13.	5.	5.	13.	
43328	9.	15.	16.	14.	9.	5.	5.	5.	5.	13.	5.	5.	13.	
43346	7.	11.	-1.	5.	10.	-1.	-1.	-1.	-1.	13.	-1.	-1.	13.	
43362	15.	16.	11.	-1.	15.	6.	6.	6.	6.	13.	6.	6.	13.	
43372	18.	16.	19.	11.	20.	-6.	-6.	-6.	-6.	13.	-6.	-6.	13.	
43373	4.	4.	11.	10.	14.	-18.	-18.	-18.	-18.	13.	-18.	-18.	13.	
43377	12.	17.	6.	11.	15.	-1.	-1.	-1.	-1.	13.	-1.	-1.	13.	
43397	16.	9.	15.	4.	16.	8.	8.	8.	8.	13.	-2.	-2.	13.	
MEAN	12.	13.	9.	8.	13.	-2.	-3.	-3.	-3.	13.	-3.	-3.	13.	
S.D.	4.6	5.1	6.3	5.0	3.6	9.5	9.5	9.5	9.5	14	5	5	14	
N	14	14	14	14	14	5	5	5	5	5	5	5	5	

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HB2D IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

WEEK	15 TO 16			16 TO 17			MALE GROUP: 0 MG/KG/DAY
	15	16	16	16	TO	17	
ANIMAL							
43289	4.			3.		SCHEDULED EUTH WEEK 17	
43295		6.		6.		SCHEDULED EUTH WEEK 17	
43308		7.		12.		SCHEDULED EUTH WEEK 17	
43316		12.		15.		SCHEDULED EUTH WEEK 17	
43326		11.		13.		SCHEDULED EUTH WEEK 17	
MEAN	8.			10.			
S.D.	3.4			5.1			
N	5			5			

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

WEEK	15 TO 16			16 TO 17			MALE GROUP: 100 MG/KG/DAY
	15	16	16 TO 17	16	17	16 TO 17	
ANIMAL							
43285	6.			12.			SCHEDULED EUTH WEEK 17
43293	9.			10.			SCHEDULED EUTH WEEK 17
43311	4.			11.			SCHEDULED EUTH WEEK 17
43320	-1.			13.			SCHEDULED EUTH WEEK 17
43340	4.			11.			SCHEDULED EUTH WEEK 17
MEAN	4.			11.			
S.D.	3.6			1.1			
N	5			5			

TABLE 71  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

	WEEK	15	TO	16	16	TO	17			MALE	GROUP: 300 MG/KG/DAY
ANIMAL											
43290		0.						3.	SCHEDULED	EUTH	WEEK 17
43307		9.						7.	SCHEDULED	EUTH	WEEK 17
43309		-1.						13.	SCHEDULED	EUTH	WEEK 17
43318		8.						-5.	SCHEDULED	EUTH	WEEK 17
43322		4.						15.	SCHEDULED	EUTH	WEEK 17
MEAN		4.						7.			
S.D.		4.5						8.0			
N		5						5			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	TO			MALE GROUP: 1000 MG/KG/DAY
		15	16	17	
43277	2.	5.	SCHEDULED	EUTH WEEK 17	
43278	5.	-2.	SCHEDULED	EUTH WEEK 17	
43280	8.	14.	SCHEDULED	EUTH WEEK 17	
43281	-2.	17.	SCHEDULED	EUTH WEEK 17	
43282	11.	16.	SCHEDULED	EUTH WEEK 17	
MEAN	5.	10.			
S.D.	5.1	8.2			
N	5	5			

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 0 MG/KG/DAY						
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
43398	23.	22.	20.	17.	11.	0.	12.	-6.
43405	18.	41.	6.	31.	17.	7.	18.	8.
43409	12.	27.	7.	28.	13.	6.	3.	19.
43423	19.	23.	14.	17.	13.	5.	9.	9.
43432	27.	34.	2.	24.	12.	24.	5.	-1.
43433	14.	36.	27.	-4.	26.	5.	7.	-1.
43435	23.	30.	32.	11.	16.	10.	13.	5.
43436	21.	24.	12.	18.	15.	9.	6.	11.
43438	22.	21.	17.	10.	22.	3.	6.	2.
43449	18.	27.	14.	19.	12.	6.	10.	0.
43467	11.	23.	19.	14.	12.	12.	4.	2.
43474	21.	19.	11.	14.	7.	5.	4.	8.
43483	22.	28.	3.	11.	13.	17.	13.	5.
43497	14.	27.	15.	20.	6.	18.	8.	16.
43501	25.	20.	24.	11.	11.	11.	17.	13.
MEAN	19.	27.	15.	16.	14.	9.	9.	6.
S.D.	4.8	6.3	8.6	8.4	5.1	6.4	4.7	6.9
N	15	15	15	15	15	15	15	15

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 100 MG/KG/DAY						
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
43400	21.	24.	33.	4.	8.	21.	1.	8.
43407	11.	23.	15.	8.	15.	3.	6.	1.
43413	16.	9.	31.	19.	13.	23.	31.	-6.
43416	13.	25.	24.	17.	10.	21.	9.	6.
43419	15.	19.	22.	4.	13.	8.	6.	2.
43420	12.	23.	18.	10.	3.	11.	11.	3.
43439	18.	40.	11.	7.	14.	14.	16.	12.
43458	9.	26.	12.	7.	18.	6.	13.	4.
43462	18.	22.	9.	8.	11.	2.	3.	9.
43468	13.	36.	19.	10.	6.	17.	9.	1.
43486	16.	36.	20.	11.	8.	13.	-1.	10.
43489	17.	28.	7.	12.	16.	5.	7.	8.
43502	19.	26.	10.	14.	10.	9.	10.	14.
43511	26.	18.	22.	11.	13.	8.	17.	5.
43515	25.	30.	22.	20.	5.	11.	9.	12.
MEAN	17.	26.	18.	11.	11.	11.	10.	6.
S.D.	4.8	7.8	4.9	4.3	6.6	7.7	5.3	
N	15	15	15	15	15	15	15	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 300 MG/KG/DAY						
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
43402	12.	23.	18.	13.	12.	2.	27.	0.
43426	10.	17.	21.	9.	1.	22.	6.	1.
43442	23.	32.	5.	24.	4.	15.	5.	3.
43446	15.	24.	8.	5.	16.	2.	10.	2.
43461	17.	28.	17.	12.	10.	10.	17.	-4.
43463	18.	25.	10.	16.	14.	4.	10.	8.
43475	18.	38.	25.	13.	18.	-2.	23.	1.
43478	22.	49.	10.	25.	25.	6.	23.	14.
43491	23.	28.	19.	23.	17.	17.	2.	4.
43495	24.	18.	29.	-1.	21.	14.	12.	2.
43496	18.	32.	27.	17.	1.	16.	13.	4.
43508	25.	16.	29.	13.	10.	7.	16.	5.
43513	26.	23.	33.	12.	3.	9.	15.	11.
43516	27.	20.	25.	12.	6.	12.	11.	4.
43517	18.	26.	18.	7.	16.	8.	7.	7.
MEAN	20.	27.	20.	13.	12.	9.	13.	4.
S.D.	5.1	8.7	8.5	7.1	7.4	6.6	7.2	4.5
N	15	15	15	15	15	15	15	15

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 1000 MG/KG/DAY						
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
43401	17.	43.	36.	1.	21.	12.	18.	4.
43410	17.	23.	12.	19.	5.	0.	16.	5.
43421	17.	33.	22.	10.	11.	16.	10.	4.
43429	19.	22.	17.	6.	22.	2.	15.	2.
43430	15.	35.	24.	12.	3.	13.	10.	3.
43440	15.	33.	20.	25.	5.	4.	9.	2.
43456	19.	40.	34.	11.	29.	7.	10.	13.
43460	11.	14.	22.	6.	12.	4.	16.	6.
43466	22.	33.	20.	21.	30.	7.	16.	11.
43477	18.	31.	6.	9.	6.	11.	8.	-6.
43479	25.	42.	31.	-8.	15.	5.	10.	-1.
43481	12.	24.	37.	25.	-7.	10.	21.	-1.
43484	9.	30.	22.	11.	4.	12.	17.	5.
43492	16.	30.	16.	11.	4.	10.	13.	2.
43503	17.	29.	13.	8.	15.	5.	20.	4.
MEAN	17.	31.	22.	11.	12.	8.	12.	4.
S.D.	4.0	7.8	9.1	8.8	10.4	4.5	6.6	4.6
N	15	15	15	15	15	15	15	15

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 0 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	9 TO 11	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15			
433398	9.	3.	7.	-2.	10.	-7.	4.	-3.	-3.	-3.			
43405	4.	7.	5.	-6.	14.	-8.	11.						
43409	3.	3.	1.	14.	-1.	-3.	-5.						
43423	8.	0.	3.	5.	4.	-5.	4.	4.	4.	4.			
43432	-4.	13.	2.	3.	15.	-6.							
43433	12.	7.	2.	-2.	14.	-1.							
43435	5.	6.	7.	6.	6.	1.							
43436	8.	3.	1.	10.	6.	0.							
43438	9.	1.	2.	3.	9.	0.							
43449	8.	3.	0.	8.	2.	1.							
43467	6.	-4.	7.	-7.	19.	-2.							
43474	8.	0.	-4.	10.	5.	-2.							
43483	9.	8.	-1.	7.	10.	3.							
43497	-6.	11.	13.	4.	-3.	6.							
43501	4.	1.	11.	-9.	4.	9.							
MEAN	6.	4.	4.	3.	8.	-1.							
S.D.	4.9	4.5	4.6	6.8	6.2	4.7							
N	15	15	15	15	15	15							

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 100 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	9 TO 11	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15			
43400	8.	-4.	18.	4.	12.	2.	-11.	7.					
43407	8.	-1.	3.	7.	5.	-6.	-13.	-4.					
43413	3.	5.	-4.	11.	2.	-6.	-5.	8.					
43416	8.	9.	7.	0.	5.	-7.	3.	7.					
43419	1.	3.	4.	5.	-4.	-3.	11.	1.					
43420	3.	9.	0.	4.	4.	-4.	-6.						
43439	-7.	11.	4.	3.	9.	-2.	SCHEDULED	EUTH	WEEK	13			
43458	-4.	5.	4.	1.	8.	-1.	SCHEDULED	EUTH	WEEK	13			
43462	4.	-4.	7.	6.	3.	2.	SCHEDULED	EUTH	WEEK	13			
43468	2.	7.	-6.	6.	14.	6.	SCHEDULED	EUTH	WEEK	13			
43486	10.	-3.	13.	11.	6.	-6.	SCHEDULED	EUTH	WEEK	13			
43489	10.	1.	-2.	11.	4.	2.	SCHEDULED	EUTH	WEEK	13			
43502	7.	3.	-1.	1.	9.	-1.	SCHEDULED	EUTH	WEEK	13			
43511	6.	4.	14.	-1.	11.	3.	SCHEDULED	EUTH	WEEK	13			
43515	1.	8.	0.	7.	10.	6.	SCHEDULED	EUTH	WEEK	13			
MEAN	4.	4.	4.	5.	7.	-1.							
S.D.	4.9	4.9	6.8	3.9	4.6	4.5							
N	15	15	15	15	15	15							

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 300 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15				
43402	13.	4.	-2.	11.	13.	-10.	4.	10.					
43426	9.	7.	3.	2.	4.	-11.	3.	7.					
43442	14.	-3.	11.	7.	4.	5.	-10.						
43446	2.	10.	3.	-1.	7.	-7.	6.						
43461	16.	14.	15.	-2.	10.	-10.	-13.	8.					
43463	-3.	7.	6.	2.	8.	-10.							
43475	4.	14.	-4.	10.	8.	-1.							
43478	-4.	8.	12.	9.	14.	5.							
43491	0.	13.	0.	5.	15.	-7.							
43495	5.	5.	6.	-3.	10.	6.							
43496	12.	16.	-3.	1.	8.	-3.							
43508	8.	-2.	2.	6.	5.	-5.							
43513	8.	-8.	17.	4.	2.	-3.							
43516	4.	7.	8.	5.	5.	5.							
43517	-7.	13.	6.	4.	5.	1.							
MEAN	5.	7.	5.	4.	8.	-3.							
S.D.	6.9	7.0	6.4	4.2	3.9	6.2							
N	15	15	15	15	15	15							

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

ANIMAL	WEEK	FEMALE GROUP: 1000 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15	SCHEDULED	EUTH	WEEK	13
43401	0.	4.	11.	9.	13.	-6.	-9.	1.					
43410	-1.	8.	7.	3.	10.	-10.	-5.	-5.					
43421	14.	4.	9.	4.	11.	0.	-18.	5.					
43429	16.	4.	10.	4.	6.	-1.	-12.	7.					
43430	-8.	8.	8.	-3.	3.	3.	-4.	1.					
43440	7.	11.	7.	-8.	0.	16.							
43456	5.	19.	7.	11.	10.	-7.							
43460	8.	2.	4.	-1.	5.	2.							
43466	4.	6.	8.	-3.	25.	6.							
43477	13.	2.	2.	13.	8.	-2.							
43479	4.	12.	-1.	1.	1.	0.							
43481	26.	17.	0.	11.	19.	0.							
43484	11.	-1.	11.	1.	9.	2.							
43492	6.	5.	3.	2.	-1.	4.							
43503	9.	8.	-1.	13.	4.	2.							
MEAN	8.	7.	6.	4.	8.	1.							
S.D.	8.0	5.6	4.2	6.4	7.1	6.1							
N	15	15	15	15	15	15							

PROJECT NO :WIL-136012  
SPONSOR :CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

	WEEK	15	TO	16	16	TO	17	
ANIMAL								FEMALE GROUP: 0 MG/KG/DAY
43398		2.			3.			SCHEDULED EUTH WEEK 17
43405		-2.			7.			SCHEDULED EUTH WEEK 17
43409		4.			2.			SCHEDULED EUTH WEEK 17
43423		3.			10.			SCHEDULED EUTH WEEK 17
43432		4.			8.			SCHEDULED EUTH WEEK 17
MEAN		2.			6.			
S.D.		2.5			3.4			
N		5			5			

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

WEEK	15	TO	16	16	TO	17	
FEMALE GROUP: 100 MG/KG/DAY							
ANIMAL							
43400	4.		-1.		SCHEDULED	EUTH	WEEK 17
43407	16.		20.		SCHEDULED	EUTH	WEEK 17
43413	-8.		13.		SCHEDULED	EUTH	WEEK 17
43416	2.		-2.		SCHEDULED	EUTH	WEEK 17
43419	6.		2.		SCHEDULED	EUTH	WEEK 17
MEAN	4.		6.				
S.D.	8.6		9.7				
N	5		5				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

WEEK 15 TO 16 16 TO 17

ANIMAL	FEMALE GROUP: 300 MG/KG/DAY			
	WEEK	15	16	16 TO 17
43402		6.	2.	SCHEDULED EUTH WEEK 17
43426		-4.	7.	SCHEDULED EUTH WEEK 17
43442		3.	-4.	SCHEDULED EUTH WEEK 17
43446		-3.	13.	SCHEDULED EUTH WEEK 17
43461		1.	12.	SCHEDULED EUTH WEEK 17
MEAN		1.	6.	
S.D.		4.2	7.1	
N		5	5	

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 71  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHT GAINS (GRAMS)

	WEEK	15	TO	16	16	TO	17	
FEMALE GROUP: 1000 MG/KG/DAY								
ANIMAL								
43401		0.		-1.		SCHEDULED	EUTH	WEEK 17
43410		6.		-1.		SCHEDULED	EUTH	WEEK 17
43421		0.		3.		SCHEDULED	EUTH	WEEK 17
43429		-1.		6.		SCHEDULED	EUTH	WEEK 17
43430		4.		15.		SCHEDULED	EUTH	WEEK 17
MEAN		2.		4.				
S.D.		3.0		6.6				
N		5		5				

PBFTSV4.13  
11/16/2000  
R:07/18/2001

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	MALE							GROUP: 0 MG/KG/DAY									
		-1	TO	0	0 TO	1	1 TO	2	2 TO	3	3 TO	4	4 TO	5	5 TO	6	6 TO	7
43289	22.	22.	21.					36.								23.	22.	21.
43295	20.	20.	18.					20.								20.	18.	19.
43308	21.	19.	18.					19.								19.	19.	19.
43316	21.	20.	19.					20.								20.	19.	20.
43326	22.	20.	20.					22.								20.	22.	22.
43332	29.	22.	20.					24.								21.	23.	24.
43334	22.	22.	20.					21.								20.	21.	19.
43336	21.	21.	20.					20.								18.	19.	18.
43339	22.	20.	19.					19.								19.	18.	18.
43349	22.	21.	21.					19.								20.	19.	19.
43365	23.	21.	21.					21.								20.	20.	19.
43368	23.	24.	23.					20.								15.	19.	19.
43369	22.	22.	20.					24.								20.	23.	22.
43379	23.	21.	21.					21.								17.	19.	19.
43391	23.	21.	15.					22.								18.	22.	18.
MEAN	22.	21.	20.					20.								18.	21.	20.
S.D.	2.0	1.2	1.8					22.								19.	21.	20.
N	15	15	15					1.8								1.7	1.5	1.7

NA = NOT APPLICABLE

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	MALE							GROUP: 100 MG/KG/DAY															
		-1	TO	0	0	TO	1	1	TO	2	2	TO	3	3	TO	4	4	TO	5	5	TO	6	6	TO	7
43285	21.	20.	19.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
43293	22.	22.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.
43311	21.	21.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
43320	25.	20.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.
43340	18.	16.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.
43342	21.	20.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.
43350	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
43351	22.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
43354	21.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
43364	21.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
43371	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
43380	22.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.
43382	23.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
43384	26.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.
43386	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
MEAN	22.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.	20.	21.
S.D.	1.9	2.3	2.0	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
N	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	MALE GROUP: 1000 MG/KG/DAY						
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
43277	20.	20.	20.	22.	20.	21.	19.	19.
43278	23.	21.	22.	23.	21.	22.	21.	21.
43280	23.	24.	25.	26.	24.	26.	25.	24.
43281	23.	19.	19.	21.	20.	21.	21.	20.
43282	20.	19.	19.	19.	18.	18.	17.	18.
43297	22.	22.	22.	24.	23.	22.	22.	21.
43325	16.	20.	19.	18.	18.	18.	18.	19.
43328	21.	21.	21.	22.	20.	23.	21.	21.
43346	21.	20.	19.	18.	18.	18.	17.	17.
43359	23.	22.	22.	21.	17.	19.	20.	20.
43362	21.	21.	21.	21.	20.	24.	23.	22.
43372	23.	23.	24.	24.	20.	16.	19.	18.
43373	20.	20.	21.	20.	19.	19.	19.	18.
43377	22.	22.	20.	20.	17.	21.	20.	20.
43397	24.	24.	24.	22.	18.	20.	19.	20.
MEAN	21.	21.	21.	21.	19.	21.	20.	20.
S.D.	2.0	1.6	2.1	2.3	2.3	2.4	2.3	1.8
N	15	15	14	14	14	14	14	14

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	7 TO	8	8 TO	9	9 TO	10	10 TO	11	11 TO	12	12 TO	13	13 TO	14	14 TO	15	MALE GROUP: 0 MG/KG/DAY	
																	ANTMAL	
43289	20.	20.		18.		19.		17.		18.		18.		24.		25.		
43295	19.	19.		19.		18.		18.		19.		19.		22.		24.		
43308	21.	20.		20.		19.		19.		19.		19.		22.		25.		
43316	20.	21.		19.		20.		18.		18.		19.		23.		25.		
43326	23.	20.		21.		19.		20.		20.		20.		21.		NA		
43332	23.	22.		22.		22.		20.		20.		20.		22.		SCHEDULED	EUTH WEEK 13	
43334	19.	20.		19.		19.		19.		19.		19.		19.		SCHEDULED	EUTH WEEK 13	
43336	17.	18.		16.		16.		16.		16.		16.		16.		SCHEDULED	EUTH WEEK 13	
43339	20.	20.		18.		19.		19.		20.		19.		19.		SCHEDULED	EUTH WEEK 13	
43349	19.	19.		19.		19.		19.		18.		18.		19.		SCHEDULED	EUTH WEEK 13	
43365	19.	18.		17.		17.		18.		17.		17.		18.		SCHEDULED	EUTH WEEK 13	
43368	22.	21.		19.		19.		18.		20.		19.		20.		SCHEDULED	EUTH WEEK 13	
43369	21.	19.		18.		18.		18.		18.		18.		17.		SCHEDULED	EUTH WEEK 13	
43379	19.	20.		19.		19.		19.		20.		19.		19.		SCHEDULED	EUTH WEEK 13	
43391	21.	20.		18.		19.		19.		20.		20.		20.		SCHEDULED	EUTH WEEK 13	
MEAN	20.	20.		19.		19.		19.		19.		19.		22.		25.		
S.D.	1.7	1.1		1.5		1.0		1.1		1.5		1.5		1.1		0.5		
N	15	15		15		15		15		15		15		5		4		

NA = NOT APPLICABLE

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	7 TO 8 TO 9					9 TO 10 TO 11					10 TO 11 TO 12					11 TO 12 TO 13					12 TO 13 TO 14					13 TO 14 TO 15				
		7	8	8	TO	9	9	TO	10	10	TO	11	11	TO	12	12	TO	13	13	TO	14	14	TO	15	15	15	15	15	15	15	
43285	20.	20.	20.	.	19.	.	19.	.	19.	.	19.	.	19.	.	21.	.	21.	.	21.	.	24.	.	25.	.							
43293	19.	19.	21.	.	20.	.	20.	.	20.	.	20.	.	20.	.	21.	.	20.	.	20.	.	20.	.	24.	.							
43311	19.	19.	19.	.	17.	.	17.	.	17.	.	16.	.	16.	.	17.	.	17.	.	17.	.	19.	.									
43320	17.	17.	17.	.	17.	.	17.	.	17.	.	17.	.	17.	.	18.	.	18.	.	18.	.	18.	.									
43340	17.	17.	18.	.	18.	.	18.	.	18.	.	17.	.	17.	.	17.	.	18.	.	18.	.	19.	.									
43342	18.	18.	18.	.	18.	.	18.	.	18.	.	20.	.	20.	.	20.	.	19.	.	19.	.	18.	.									
43350	21.	21.	21.	.	19.	.	19.	.	19.	.	18.	.	18.	.	17.	.	18.	.	18.	.	18.	.									
43351	19.	19.	19.	.	18.	.	18.	.	18.	.	15.	.	15.	.	15.	.	15.	.	15.	.	16.	.									
43354	18.	18.	18.	.	18.	.	18.	.	18.	.	20.	.	20.	.	20.	.	20.	.	20.	.	19.	.									
43364	21.	21.	20.	.	20.	.	20.	.	20.	.	19.	.	19.	.	19.	.	19.	.	19.	.	18.	.									
43371	19.	19.	19.	.	19.	.	19.	.	19.	.	19.	.	19.	.	19.	.	19.	.	19.	.	16.	.									
43380	20.	20.	19.	.	19.	.	19.	.	19.	.	20.	.	20.	.	20.	.	18.	.	18.	.	19.	.									
43382	20.	20.	20.	.	20.	.	20.	.	20.	.	21.	.	21.	.	22.	.	22.	.	22.	.	20.	.									
43384	23.	23.	23.	.	18.	.	18.	.	18.	.	17.	.	17.	.	17.	.	19.	.	19.	.	17.	.									
43386	18.	18.	18.	.	18.	.	18.	.	18.	.	18.	.	18.	.	18.	.	19.	.	19.	.	18.	.									
MEAN	19.	19.	19.	.	18.	.	18.	.	18.	.	18.	.	18.	.	19.	.	19.	.	19.	.	18.	.									
S.D.	1.6	1.6	1.3	.	1.8	.	1.8	.	1.8	.	1.5	.	1.5	.	1.5	.	1.7	.	1.7	.	1.9	.									
N	15	15	15	.	15	.	15	.	15	.	15	.	15	.	15	.	15	.	15	.	15	.									

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	MALE GROUP: 300 MG/KG/DAY														
	WEEK	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15						
43290	17.	17.	17.	17.	18.	18.	18.	19.	21.						
43307	20.	20.	20.	20.	19.	21.	20.	20.	20.	20.	20.	20.	20.	20.	22.
43309	22.	22.	21.	20.	21.	20.	21.	20.	20.	20.	20.	20.	20.	20.	22.
43318	19.	21.	21.	20.	21.	20.	21.	20.	19.	20.	19.	19.	19.	19.	24.
43322	19.	18.	20.	19.	20.	19.	19.	20.	20.	18.	18.	18.	18.	18.	26.
43323	17.	16.	15.	16.	15.	16.	16.	16.	16.	16.	16.	16.	16.	16.	24.
43331	19.	20.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	19.	13.
43341	20.	20.	20.	20.	19.	19.	19.	19.	18.	19.	19.	19.	19.	19.	13.
43355	22.	22.	21.	21.	22.	21.	22.	22.	22.	22.	21.	21.	21.	21.	13.
43361	23.	22.	23.	23.	24.	23.	24.	23.	24.	23.	24.	24.	24.	24.	13.
43363	17.	17.	17.	17.	17.	17.	17.	17.	17.	16.	16.	16.	16.	16.	13.
43383	21.	20.	20.	20.	19.	19.	19.	19.	19.	18.	19.	19.	19.	19.	13.
43385	18.	19.	18.	18.	18.	18.	18.	18.	20.	20.	19.	19.	19.	19.	13.
43388	21.	21.	21.	20.	20.	21.	22.	21.	21.	20.	20.	20.	20.	20.	13.
43392	19.	18.	19.	19.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	13.
MEAN	20.	20.	19.	20.	19.	20.	19.	19.	19.	19.	19.	19.	19.	19.	
S.D.	1.9	2.0	1.9	2.2	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
N	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	MALE GROUP: 1000 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15	SCHEDULED	EUTH	WEEK	13
43277	19.	18.	17.	18.	16.	15.	17.	21.					
43278	20.	20.	19.	20.	19.	15.	18.	22.					
43280	24.	23.	21.	22.	20.	20.	20.	23.					
43281	20.	21.	20.	20.	20.	20.	19.	22.					
43282	18.	16.	18.	18.	18.	18.	17.	21.					
43297	21.	21.	20.	20.	20.	21.	21.	20.					
43325	17.	18.	17.	16.	16.	16.	17.	21.					
43328	20.	22.	22.	22.	22.	21.	21.	21.					
43346	16.	15.	15.	16.	15.	15.	15.	14.					
43362	19.	20.	19.	19.	19.	19.	19.	19.					
43372	21.	22.	20.	20.	20.	21.	21.	21.					
43373	17.	16.	16.	17.	17.	17.	17.	15.					
43377	19.	19.	19.	20.	19.	19.	19.	19.					
43397	20.	19.	20.	19.	19.	19.	19.	19.					
MEAN	19.	19.	19.	19.	19.	18.	18.	20.					
S.D.	2.0	2.5	2.0	1.9	2.0	2.2	2.2	2.7					
N	14	14	14	14	14	14	14	5					

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	15	TO	16	16	TO	17		MALE	GROUP:	0	MG/KG/DAY
ANIMAL							SCHEDULED	EUTH	WEEK	17	
43289	27.		26.				SCHEDULED	EUTH	WEEK	17	
43295	25.		24.				SCHEDULED	EUTH	WEEK	17	
43308	25.		27.				SCHEDULED	EUTH	WEEK	17	
43316	26.		26.				SCHEDULED	EUTH	WEEK	17	
43326	9.		29.				SCHEDULED	EUTH	WEEK	17	
MEAN	22.		26.								
S.D.	7.5		1.8								
N	5		5								

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	TO			16	17	MALE	GROUP: 100 MG/KG/DAY
	15	16	17				
ANIMAL							
43285	27.	26.	26.	SCHEDULED	EUTH	WEEK	17
43293	26.	27.	27.	SCHEDULED	EUTH	WEEK	17
43311	24.	24.	24.	SCHEDULED	EUTH	WEEK	17
43320	23.	23.	24.	SCHEDULED	EUTH	WEEK	17
43340	23.	23.	23.	SCHEDULED	EUTH	WEEK	17
MEAN	25.	25.	25.				
S.D.	1.8	1.6	1.6				
N	5	5	5				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	15	TO	16	16	TO	17		MALE	GROUP: 300 MG/KG/DAY
ANIMAL							SCHEDULED	EUTH	WEEK 17
43290	21.		23.				SCHEDULED	EUTH	WEEK 17
43307	24.		24.				SCHEDULED	EUTH	WEEK 17
43309	26.		27.				SCHEDULED	EUTH	WEEK 17
43318	28.		26.				SCHEDULED	EUTH	WEEK 17
43322	25.		26.				SCHEDULED	EUTH	WEEK 17
MEAN	25.		25.						
S.D.	2.6		1.6						
N	5		5						

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	15	TO	16	16	TO	17		MALE	GROUP: 1000 MG/KG/DAY
ANIMAL							SCHEDULED	EUTH	WEEK 17
43277	23.		23.				SCHEDULED	EUTH	WEEK 17
43278	24.		23.				SCHEDULED	EUTH	WEEK 17
43280	29.		28.				SCHEDULED	EUTH	WEEK 17
43281	25.		26.				SCHEDULED	EUTH	WEEK 17
43282	22.		22.				SCHEDULED	EUTH	WEEK 17
MEAN	25.		24.						
S.D.	2.7		2.5						
N	5		5						

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	FEMALE GROUP: 0 MG/KG/DAY							6 TO 7
		-1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	
43398	14.	13.	12.	14.	12.	11.	12.	10.	
43405	17.	18.	16.	18.	16.	17.	17.	17.	
43409	15.	15.	14.	16.	13.	14.	16.	16.	
43423	16.	14.	14.	14.	13.	13.	13.	14.	
43432	19.	18.	14.	17.	17.	19.	19.	17.	
43433	16.	15.	15.	15.	15.	14.	14.	15.	
43435	17.	15.	16.	17.	14.	16.	16.	16.	
43436	17.	15.	15.	15.	15.	16.	16.	15.	
43438	17.	15.	14.	15.	15.	14.	14.	14.	
43449	15.	14.	14.	16.	14.	15.	15.	13.	
43467	17.	15.	15.	16.	13.	15.	15.	14.	
43474	17.	15.	14.	15.	12.	14.	14.	13.	
43483	16.	14.	12.	13.	12.	14.	14.	13.	
43497	17.	15.	15.	15.	13.	16.	14.	16.	
43501	17.	16.	17.	16.	14.	18.	18.	17.	
MEAN	16.	15.	14.	15.	14.	15.	14.	14.	
S.D.	1.2	1.4	1.4	1.3	1.5	2.0	1.7	1.9	
N	15	15	15	15	15	15	15	15	

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	FEMALE GROUP: 100 MG/KG/DAY						
	1 TO 0	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6
WEEK	-1	0	1	2	3	4	5
43400	16.	16.	15.	15.	13.	15.	13.
43407	15.	13.	13.	13.	17.	12.	17.
43413	23.	18.	15.	15.	14.	17.	11.
43415	15.	14.	14.	15.	14.	16.	17.
43416	15.	14.	14.	15.	14.	16.	15.
43419	15.	14.	13.	16.	12.	13.	15.
43420	15.	13.	13.	13.	12.	14.	11.
43429	13.	14.	12.	12.	12.	14.	12.
43439	13.	14.	12.	12.	12.	14.	12.
43458	14.	13.	12.	12.	13.	13.	13.
43462	16.	13.	13.	15.	12.	12.	12.
43468	16.	16.	15.	15.	13.	14.	13.
43486	17.	17.	16.	18.	14.	17.	16.
43489	18.	15.	15.	15.	13.	15.	15.
43502	17.	15.	13.	14.	13.	14.	13.
43511	18.	15.	15.	15.	13.	14.	15.
43515	20.	18.	18.	18.	14.	18.	17.
MEAN	17.	15.	14.	15.	13.	15.	14.
S.D.	2.5	1.8	1.6	1.8	1.3	1.8	2.2
N	15	15	15	15	15	15	15

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK -1 TO 0							FEMALE GROUP: 300 MG/KG/DAY						
	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7
43402	17.	14.	16.	15.	15.	14.	16.	15.	13.	11.	11.	11.	12.	13.
43426	14.	12.	13.	13.	11.	11.	15.	14.	14.	11.	11.	12.	12.	13.
43442	16.	15.	14.	15.	15.	14.	15.	15.	15.	11.	11.	12.	12.	12.
43446	14.	13.	11.	11.	11.	11.	15.	15.	15.	11.	11.	12.	12.	11.
43461	17.	17.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	16.	14.
43463	14.	14.	13.	14.	14.	13.	14.	14.	13.	13.	13.	13.	14.	13.
43475	15.	16.	15.	15.	15.	14.	15.	15.	14.	14.	14.	13.	13.	14.
43478	17.	19.	16.	17.	17.	17.	17.	17.	17.	17.	17.	17.	17.	16.
43491	17.	16.	16.	18.	18.	17.	17.	17.	17.	17.	17.	17.	17.	16.
43495	17.	14.	14.	14.	14.	14.	14.	14.	14.	16.	16.	16.	15.	15.
43496	17.	15.	16.	16.	16.	16.	16.	16.	16.	13.	13.	13.	15.	14.
43508	16.	14.	15.	15.	15.	15.	15.	15.	15.	13.	13.	13.	16.	14.
43513	16.	16.	16.	16.	16.	16.	16.	16.	16.	13.	13.	13.	16.	14.
43516	17.	15.	15.	15.	15.	15.	15.	15.	15.	12.	12.	12.	14.	13.
43517	17.	15.	15.	15.	15.	15.	15.	15.	15.	13.	13.	13.	14.	14.
MEAN	16.	15.	15.	15.	15.	14.	15.	14.	14.	15.	15.	15.	14.	14.
S.D.	1.2	1.7	1.4	1.6	1.6	1.9	1.6	1.6	1.6	1.5	1.5	1.5	1.6	1.3
N	15	15	15	15	15	15	15	15	15	15	15	15	15	15

TABLE 72  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK -1 TO 0							WEEK 1 TO 2							FEMALE GROUP: 1000 MG/KG/DAY						
	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	0 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7
43401	17.	19.	19.	19.	19.	19.	19.	17.	17.	17.	17.	17.	17.	17.	19.	19.	19.	19.	19.	19.	19.
43410	13.	13.	14.	14.	14.	14.	14.	12.	12.	12.	12.	12.	12.	12.	11.	11.	11.	11.	11.	11.	12.
43421	17.	17.	17.	17.	17.	17.	17.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.
43429	17.	16.	15.	15.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	15.	15.	15.	15.	15.	15.	15.
43430	17.	17.	17.	17.	17.	17.	17.	15.	15.	15.	15.	15.	15.	15.	16.	16.	16.	16.	16.	16.	16.
43440	15.	15.	14.	14.	14.	14.	14.	17.	17.	17.	17.	17.	17.	17.	13.	13.	13.	13.	13.	13.	14.
43456	19.	20.	20.	20.	20.	20.	20.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.	21.
43460	14.	12.	13.	13.	13.	13.	13.	12.	12.	12.	12.	12.	12.	12.	13.	13.	13.	13.	13.	13.	13.
43466	18.	17.	17.	17.	17.	17.	17.	19.	19.	19.	19.	19.	19.	19.	18.	18.	18.	18.	18.	18.	17.
43477	16.	15.	15.	15.	15.	15.	15.	13.	13.	13.	13.	13.	13.	13.	12.	12.	12.	12.	12.	12.	12.
43479	16.	18.	18.	18.	18.	18.	18.	15.	15.	15.	15.	15.	15.	15.	13.	13.	13.	13.	13.	13.	13.
43481	16.	16.	16.	16.	16.	16.	16.	18.	18.	18.	18.	18.	18.	18.	20.	20.	20.	20.	20.	20.	20.
43484	17.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	17.	17.	17.	17.	17.	17.	17.
43492	18.	15.	15.	15.	15.	15.	15.	16.	16.	16.	16.	16.	16.	16.	12.	12.	12.	12.	12.	12.	12.
43503	14.	14.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.	12.	12.	12.	12.	12.	12.	12.
MEAN	16.	16.	16.	16.	16.	16.	16.	17.	17.	17.	17.	17.	17.	17.	14.	14.	14.	14.	14.	14.	14.
S.D.	1.7	2.1	2.3	2.3	2.3	2.3	2.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2
N	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	FEMALE GROUP: 0 MG/KG/DAY									
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15		
43398	11.	11.	12.	9.	11.	11.	11.	11.	11.	14.	
43405	15.	16.	13.	12.	14.	13.	13.	13.	13.	19.	
43409	14.	15.	15.	13.	12.	12.	13.	13.	13.	21.	
43423	13.	12.	12.	12.	12.	11.	11.	11.	16.	25.	
43432	15.	17.	14.	15.	15.	17.	17.	14.	16.	18.	
43433	16.	13.	15.	16.	16.	17.	17.	13.	13.	19.	
43435	14.	15.	14.	13.	13.	14.	14.	15.	15.	SCHEDULED	EUTH WEEK 13
43436	14.	14.	13.	13.	13.	13.	13.	13.	13.	SCHEDULED	EUTH WEEK 13
43438	13.	13.	13.	13.	13.	13.	13.	13.	13.	SCHEDULED	EUTH WEEK 13
43449	14.	13.	13.	13.	13.	13.	13.	13.	13.	SCHEDULED	EUTH WEEK 13
43467	14.	13.	13.	12.	12.	12.	13.	13.	13.	SCHEDULED	EUTH WEEK 13
43474	13.	12.	12.	13.	13.	13.	13.	13.	13.	SCHEDULED	EUTH WEEK 13
43483	14.	14.	13.	13.	13.	14.	14.	14.	14.	SCHEDULED	EUTH WEEK 13
43497	13.	14.	15.	14.	15.	13.	13.	14.	14.	SCHEDULED	EUTH WEEK 13
43501	16.	17.	17.	17.	17.	12.	13.	13.	17.	SCHEDULED	EUTH WEEK 13
MEAN	14.	14.	14.	13.	13.	13.	13.	13.	16.	19.	
S.D.	1.3	1.8	1.4	1.6	1.7	1.5	1.5	1.5	3.6	3.9	
N	15	15	15	15	15	15	15	15	5	5	

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	FEMALE GROUP: 100 MG/KG/DAY														
	WEEK	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15						
43400	14.	13.	14.	15.	14.	14.	14.	14.	14.	14.	14.	14.	14.	14.	14.
43407	11.	11.	12.	11.	11.	11.	11.	11.	11.	12.	12.	12.	12.	12.	9.
43413	13.	12.	12.	13.	13.	11.	11.	11.	13.	15.	15.	15.	16.	16.	16.
43416	16.	16.	15.	13.	14.	14.	14.	14.	13.	16.	16.	16.	16.	16.	18.
43419	10.	12.	11.	11.	11.	10.	10.	10.	11.	11.	11.	11.	11.	11.	16.
43420	13.	14.	13.	13.	13.	14.	14.	14.	13.	14.	14.	13.	13.	13.	13.
43439	12.	12.	12.	10.	10.	11.	11.	11.	11.	11.	11.	11.	11.	11.	13.
43458	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	13.
43462	11.	12.	12.	12.	11.	11.	11.	11.	11.	12.	12.	12.	12.	12.	13.
43468	13.	14.	14.	12.	12.	12.	12.	12.	12.	15.	15.	15.	15.	15.	13.
43486	15.	14.	14.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	13.
43489	14.	14.	14.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.	13.
43502	14.	13.	13.	13.	13.	12.	12.	12.	12.	13.	13.	13.	13.	13.	13.
43511	13.	14.	14.	15.	15.	15.	16.	16.	16.	16.	16.	16.	16.	16.	13.
43515	17.	16.	15.	15.	15.	16.	16.	16.	16.	16.	16.	16.	16.	16.	13.
MEAN	13.	13.	13.	13.	13.	13.	13.	13.	14.	13.	13.	13.	13.	13.	13.
S.D.	1.9	1.5	1.6	1.6	1.6	4.5	4.5	4.5	1.6	1.6	1.5	1.5	1.5	1.5	1.5
N	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	FEMALE GROUP: 300 MG/KG/DAY																									
	WEEK	7	TO	8	8	TO	9	9	TO	10	10	TO	11	11	TO	12	12	TO	13	13	TO	14	14	TO	15	
43402		14.		15.		14.		15.		16.		14.		18.		22.										
43426		13.		13.		12.		12.		12.		11.		11.		14.		16.								
43442		14.		12.		12.		14.		12.		12.		14.		14.		16.								
43446		11.		12.		11.		10.		11.		11.		11.		11.		13.								
43446		11.		12.		11.		10.		11.		11.		11.		13.		15.								
43461		15.		15.		17.		15.		15.		13.		13.		13.		18.								
43463		13.		12.		13.		12.		12.		12.		12.		12.		13.								
43475		11.		13.		12.		12.		12.		12.		12.		11.		13.								
43478		15.		15.		14.		15.		15.		16.		16.		15.		15.								
43491		14.		15.		14.		13.		13.		15.		14.		14.		14.								
43495		15.		13.		14.		13.		14.		13.		14.		14.		15.								
43496		15.		15.		14.		14.		14.		13.		14.		13.		13.								
43508		15.		14.		14.		14.		14.		14.		14.		15.		15.								
43513		15.		14.		14.		15.		15.		14.		12.		15.		15.								
43516		13.		14.		14.		14.		14.		14.		14.		14.		14.								
43517		11.		14.		15.		15.		14.		14.		14.		14.		14.								
MEAN		14.		14.		14.		13.		13.		13.		13.		13.		14.								
S.D.		1.5		1.2		1.5		1.4		1.6		1.5		1.5		1.5		2.1								
N		15		15		15		15		15		15		15		15		5								

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

ANIMAL	WEEK	FEMALE GROUP: 1000 MG/KG/DAY											
		7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 13	13 TO 14	14 TO 15	15.	16.	17.	18.
43401	17.	17.	17.	20.	19.	17.	17.	17.	17.	17.	11.	11.	12.
43410	11.	12.	13.	12.	12.	12.	12.	12.	12.	12.	14.	14.	16.
43421	16.	16.	16.	14.	14.	15.	15.	15.	15.	15.	15.	15.	17.
43429	16.	16.	15.	16.	16.	15.	16.	15.	16.	15.	16.	15.	17.
43430	13.	14.	13.	13.	13.	13.	13.	13.	13.	15.	15.	15.	17.
43440	13.	15.	14.	14.	12.	14.	14.	14.	14.	15.	15.	15.	SCHEDULED EUTH WEEK 13
43446	18.	19.	18.	18.	18.	18.	18.	17.	17.	17.	17.	17.	SCHEDULED EUTH WEEK 13
43440	13.	14.	14.	14.	12.	13.	13.	13.	13.	13.	13.	13.	SCHEDULED EUTH WEEK 13
43446	16.	15.	15.	16.	15.	16.	15.	16.	16.	17.	17.	17.	SCHEDULED EUTH WEEK 13
43466	16.	15.	15.	16.	15.	16.	15.	16.	16.	17.	17.	17.	SCHEDULED EUTH WEEK 13
43477	13.	14.	13.	14.	13.	14.	14.	14.	14.	14.	14.	14.	SCHEDULED EUTH WEEK 13
43479	13.	15.	13.	15.	13.	12.	12.	12.	12.	12.	13.	13.	SCHEDULED EUTH WEEK 13
43481	19.	19.	19.	17.	17.	17.	17.	18.	18.	18.	17.	17.	SCHEDULED EUTH WEEK 13
43484	14.	13.	14.	14.	14.	14.	14.	13.	13.	13.	14.	14.	SCHEDULED EUTH WEEK 13
43492	14.	14.	14.	14.	14.	14.	14.	13.	13.	13.	13.	13.	SCHEDULED EUTH WEEK 13
43503	13.	13.	13.	13.	13.	14.	13.	13.	13.	13.	13.	13.	SCHEDULED EUTH WEEK 13
MEAN	15.	15.	15.	14.	14.	14.	14.	15.	15.	15.	15.	15.	16.
S.D.	2.3	2.1	1.7	2.4	2.2	1.9	2.2	1.9	1.9	1.9	3.4	3.4	2.2
N	15	15	15	15	15	15	15	15	15	15	5	5	5

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

	WEEK	15	TO	16	16	TO	17	
FEMALE GROUP: 0 MG/KG/DAY								
ANIMAL								
43398		15.		17.		SCHEDULED	EUTH	WEEK 17
43405		19.		19.		SCHEDULED	EUTH	WEEK 17
43409		18.		23.		SCHEDULED	EUTH	WEEK 17
43423		17.		17.		SCHEDULED	EUTH	WEEK 17
43432		21.		20.		SCHEDULED	EUTH	WEEK 17
MEAN		18.		19.				
S.D.		2.2		2.5				
N		5		5				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK 15 TO 16 16 TO 17

		FEMALE GROUP: 100 MG/KG/DAY		
ANIMAL				
43400	18.	17.	SCHEDULED	EUTH WEEK 17
43407	16.	18.	SCHEDULED	EUTH WEEK 17
43413	17.	17.	SCHEDULED	EUTH WEEK 17
43416	18.	18.	SCHEDULED	EUTH WEEK 17
43419	16.	16.	SCHEDULED	EUTH WEEK 17
MEAN	17.	17.		
S.D.	1.0	0.8		
N	5	5		

PAGE 22

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK 15 TO 16 16 TO 17

FEMALE GROUP: 300 MG/KG/DAY

ANIMAL	21.	21.	SCHEDULED EUTH WEEK 17
43402	21.	21.	SCHEDULED EUTH WEEK 17
43426	16.	17.	SCHEDULED EUTH WEEK 17
43442	16.	17.	SCHEDULED EUTH WEEK 17
43446	15.	17.	SCHEDULED EUTH WEEK 17
43461	18.	20.	SCHEDULED EUTH WEEK 17
MEAN	17.	18.	
S.D.	2.4	1.9	
N	5	5	

PAGE 23

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 72  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FOOD CONSUMPTION (GRAMS/ANIMAL/DAY)

WEEK	15	TO	16	16	TO	17	
FEMALE GROUP: 1000 MG/KG/DAY							
ANIMAL							
43401	19.		19.		SCHEDULED	EUTH	WEEK 17
43410	14.		14.		SCHEDULED	EUTH	WEEK 17
43421	17.		18.		SCHEDULED	EUTH	WEEK 17
43429	18.		19.		SCHEDULED	EUTH	WEEK 17
43430	19.		21.		SCHEDULED	EUTH	WEEK 17
MEAN	17.		18.				
S.D.	2.1		2.6				
N	5						

PBFTSV4.13  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43289	1	1	1	1	1	1	1
43295	1	1	1	1	1	1	1
43308	1	1	1	1	1	1	1
43316	1	1	1	1	1	1	1
43326	3	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43285	1	1	1	1	1	1	1
43293	1	1	1	1	1	1	1
43311	1	1	1	1	1	1	1
43320	1	1	1	1	1	1	1
43340	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRP

HOME CAGE OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43290	1	1	1	1	1	1	1
43307	1	1	1	1	1	1	1
43309	1	1	1	1	1	1	1
43318	1	1	1	1	1	1	1
43322	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: PRETEST

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES	CONSISTENCY
		CLONIC	TONIC					
43277	1	1	1	1	1	1	1	1
43278	1	1	1	1	1	1	1	1
43280	1	1	1	1	1	1	1	1
43281	2	1	1	1	1	1	1	1
43282	1	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR :CWA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS			BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC	TREMORS			
43398	1	1	1	1	1	1	1
43405	1	1	1	1	1	1	1
43409	1	1	1	1	1	1	1
43423	1	1	1	1	1	1	1
43432	1	1	1	1	1	1	1

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 73 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY

SEX: FEMALE  
TEST PERIOD: PRETEST

ANIMAL NUMBER	POSTURE	CONVULSIONS				PALPEBRAL CLOSURE	BITING	TREMORS	TONIC	CLONIC	FECES CONSISTENCY
		CLOSTRIDIAL	TONIC	CLONIC	TONIC						
43401	1	1	1	1	1	1	1	1	1	1	1
43410	1	1	1	1	1	1	1	1	1	1	1
43421	1	1	1	1	1	1	1	1	1	1	1
43429	1	1	1	1	1	1	1	1	1	1	1
43430	1	1	1	1	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBV3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43289	1	1	1	1	1	1	1
43295	2	1	1	1	1	4	1
43308	1	1	1	1	1	1	1
43316	1	1	1	1	1	1	1
43326	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43285	3	1	1	1	1	1	1
43293	2	1	1	1	1	4	1
43311	1	1	1	1	1	1	1
43320	1	1	1	1	1	1	1
43340	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

CONVULSIONS

ANIMAL NUMBER	POSTURE	CLONIC		TONIC	TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC					
43290	3	1	1		1	1	1	1
43307	1	1	1		1	1	1	1
43309	1	1	1		1	1	1	1
43318	1	1	1		1	1	1	1
43322	2	1	1		1	1	4	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

CONVULSIONS

ANIMAL NUMBER	POSTURE	CLONIC		TONIC		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC	TREMORS	BITING				
43277	1	1	1	1	1	1	1	1	1
43278	2	1	1	1	1	1	4	1	1
43280	3	1	1	1	1	1	1	1	1
43281	1	1	1	1	1	1	1	1	1
43282	1	1	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43398	1	1	1	1	1	1	1
43405	1	1	1	1	1	1	1
43409	1	1	1	1	1	1	1
43423	1	1	1	1	1	1	1
43432	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43400	1	1	1	1	1	1	1
43407	1	1	1	1	1	1	1
43413	3	1	1	1	1	1	1
43416	1	1	1	1	1	1	1
43419	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43402	1	1	1	1	1	1	1
43426	1	1	1	1	1	1	1
43442	1	1	1	1	1	1	1
43446	1	1	1	1	1	1	1
43461	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012

SPONSOR :CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 74 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43401	3	1	1	1	1	1	1
43410	3	1	1	1	1	1	1
43421	2	1	1	1	1	4	1
43429	1	1	1	1	1	1	1
43430	1	1	1	1	1	1	1

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PFOBV3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG./KG./DAY

SEX: MALES

TEST PERIOD: WEEK 16

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43289	1	1	1	1	1	1	4
43295	1	1	1	1	1	2	4
43308	1	1	1	1	1	1	1
43316	2	1	1	1	1	3	1
43326	2	1	1	1	1	4	4

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-136012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITTING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43285	1	1	1	1	1	1	1
43293	2	1	1	1	1	3	4
43311	1	1	1	1	1	1	4
43320	1	1	1	1	1	1	4
43340	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43290	1	1	1	1	1	1	1
43307	1	1	1	1	1	1	4
43309	1	1	1	1	1	1	1
43318	1	1	1	1	1	1	1
43322	2	1	1	1	1	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43277	2	1	1	1	1	2	4
43278	2	1	1	1	1	3	2
43280	3	1	1	1	1	1	4
43281	2	1	1	1	1	2	1
43282	1	1	1	1	1	1	4

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRP  
TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: WEEK 16

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43398	1	1	1	1	1	1	4
43405	3	1	1	1	3	1	1
43409	3	1	1	1	1	1	4
43423	1	1	1	1	1	1	1
43432	3	1	1	1	1	1	4

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

- DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	POSTURE	CONVULSIONS		BITING	PALPEBRA CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC			
43400	3	1	1	1	1	4
43407	1	1	1	1	1	4
43413	3	1	1	1	1	4
43416	1	1	1	1	1	1
43419	3	1	1	1	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HOME CAGE OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRA CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43402	3	1	1	1	1	1	1
43426	1	1	1	1	1	1	1
43442	3	1	1	1	1	1	4
43446	1	1	1	1	1	1	4
43461	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 75 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HOME CAGE OBSERVATIONS

- - - - - DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

ANIMAL NUMBER	POSTURE	CONVULSIONS		TREMORS	BITING	PALPEBRAL CLOSURE	FECES CONSISTENCY
		CLONIC	TONIC				
43401	3	1	1	1	1	1	4
43410	3	1	1	1	2	1	4
43421	1	1	1	1	1	1	4
43429	1	1	1	1	1	1	4
43430	3	1	1	1	1	1	1

- - - - - OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBy3.1  
03/12/2001  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43289	2	1	1	1	1
43295	1	1	1	1	1
43308	2	1	1	1	1
43316	1	1	1	1	1
43326	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. WIL-186012  
SPONSOR: CMA-BERIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEbral CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43289	1	1	1	1	1	2	2	2
43295	1	1	1	1	1	2	2	2
43308	1	1	1	1	1	2	2	2
43316	1	1	1	1	1	2	2	2
43326	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			SKIN	EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN			
43289	2	2	2	1	1	1	1	1	1
43295	2	2	2	1	1	1	1	1	1
43308	2	2	2	1	1	1	1	1	1
43316	2	2	2	1	1	1	1	1	1
43326	2	2	2	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

SEX: MALES

TEST PERIOD: PRETEST

ANIMAL NUMBER	BASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHIA	SALIVATION
43285	2	1	1	1	1
43293	1	1	1	1	1
43311	1	1	1	1	1
43320	2	1	1	1	1
43340	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43285	1	1	1	1	1	2	2	2
43293	1	1	1	1	1	2	2	2
43311	1	1	1	1	1	2	2	2
43320	1	1	1	1	1	2	2	2
43340	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

SEX: MALES

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN	
43285	2	2	2	1	1	1	1
43293	2	2	2	1	1	1	1
43311	2	2	2	1	1	1	1
43320	2	2	2	1	1	1	1
43340	2	2	2	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43290	2	1	1	1	1
43307	1	1	1	1	1
43309	1	1	1	1	1
43318	1	1	1	1	1
43322	2	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43290	1	1	1	1	1	2	2	2
43307	1	1	1	1	1	2	2	2
43309	1	1	1	1	1	2	2	2
43318	1	1	1	1	1	2	2	2
43322	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYES	MUCOUS MEMBRANES	MOUTH
	EYES	NOSE	MOUTH								
43290	2	2	2	1			1	1	1		1
43307	2	2	2	1			1	1	1		1
43309	2	2	2	1			1	1	1		1
43318	2	2	2	1			1	1	1		1
43322	2	2	2	1			1	1	1		1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43277	1	1	1	1	1
43278	2	1	1	1	1
43280	2	1	1	1	1
43281	2	1	1	1	1
43282	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43277	1	1	1	1	1	2	2	2
43278	1	1	1	1	1	2	2	2
43280	1	1	1	1	1	2	2	2
43281	1	1	1	1	1	2	2	2
43282	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYES	MUCOUS MEMBRANES	NOSE	MOUTH
	EYES	NOSE	MOUTH									
43277	2	2	2	1			1	1	1			1
43278	2	2	2	1			1	1	1			1
43280	2	2	2	1			1	1	1			1
43281	2	2	2	1			1	1	1			1
43282	2	2	2	1			1	1	1			1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION		
						SEX: FEMALE	TEST PERIOD: PRETEST
43398	1	1	1	1	1		
43405	1	1	1	1	1		
43409	2	1	1	1	1		
43423	1	1	1	1	1		
43432	2	1	1	1	1		

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	FUR	PILOERECTION	APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
							EYES	NOSE	MOUTH
43398	1	1	1	1	1	1	2	2	2
43405	1	1	1	1	1	1	2	2	2
43409	1	1	1	1	1	1	2	2	2
43423	1	1	1	1	1	1	2	2	2
43432	1	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN		
43398	2	2	2	1	1	1	1	1
43405	2	2	2	1	1	1	1	1
43409	2	2	2	1	1	1	1	1
43423	2	2	2	1	1	1	1	1
43432	2	2	2	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG./KG./DAY  
TEST PERIOD: PRETEST

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 16

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43400	1	1	1	1	1
43407	2	1	1	1	1
43413	1	1	1	1	1
43416	2	1	1	1	1
43419	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 76 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43400	1	1	1	1	1	2	2	2
43407	1	1	1	1	1	2	2	2
43413	1	1	1	1	1	2	2	2
43416	1	1	1	1	1	2	2	2
43419	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN			
43400	2	2	2	1	1	1	1	1	1
43407	2	2	2	1	1	1	1	1	1
43413	2	2	2	1	1	1	1	1	1
43416	2	2	2	1	1	1	1	1	1
43419	2	2	2	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43402	2	1	1	1	1
43426	2	1	1	1	1
43442	2	1	1	1	1
43446	2	1	1	1	1
43461	2	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43402	1	1	1	1	1	2	2	2
43426	1	1	1	1	1	2	2	2
43442	1	1	1	1	1	2	2	2
43446	1	1	1	1	1	2	2	2
43461	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYES	MUCOUS MEMBRANES	MOUTH
	EYES	NOSE	MOUTH								
434402	2	2	2	1			1	1	1		1
434426	2	2	2	1			1	1	1		1
434442	2	2	2	1			1	1	1		1
434446	2	2	2	1			1	1	1		1
434461	2	2	2	1			1	1	1		1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHIA	SALIVATION
43401	1	1	1	1	1
43410	2	1	1	1	1
43421	2	1	1	1	1
43429	2	1	1	1	1
43430	2	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: FEMALES

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	EYES	RED DEPOSITS	
							NOSE	MOUTH
43401	1	1	1	1	1	1	2	2
43410	1	1	1	1	1	1	2	2
43421	1	1	1	1	1	1	2	2
43429	1	1	1	1	1	1	2	2
43430	1	1	1	1	1	1	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 76 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN	
43401	2	2	2	1	1	1	1
43410	2	2	2	1	1	1	1
43421	2	2	2	1	1	1	1
43429	2	2	2	1	1	1	1
43430	2	2	2	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43289	1	1	1	1	1
43295	1	1	1	1	1
43308	1	1	1	1	1
43316	1	1	1	1	1
43326	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43289	1	1	1	1	1	2	2	2
43295	1	1	1	1	1	2	2	2
43308	1	1	1	1	1	2	2	2
43316	1	1	1	1	1	2	2	2
43326	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			SKIN	EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES				
43289	2	2	2	1		1	1	1	1
43295	2	2	2	1		1	1	1	1
43308	2	2	2	1		1	1	1	1
43316	2	2	2	1		1	1	1	1
43326	2	2	2	1		1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODAGYORRHEA	SALIVATION
43285	1	1	1	1	1
43293	1	1	1	1	1
43311	1	1	1	1	1
43320	1	1	1	1	1
43340	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43285	1	1	1	1	1	2	2	2
43293	1	1	1	1	1	1	2	2
43311	1	1	1	1	1	2	2	2
43320	1	1	1	1	1	2	2	2
43340	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYES	MUCOUS MEMBRANES	MOUTH	NOSE	EYES
	EYES	NOSE	MOUTH										
43285	2	2	2	1			1	1	1				1
43293	2	2	2	1			1	1	1				1
43311	2	2	2	1			1	1	1				1
43320	2	2	2	1			1	1	1				1
43340	2	2	2	1			1	1	1				1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO : WIL-186012  
SPONSOR : CMA - BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43290	3	1	1	1	1
43307	1	1	1	1	1
43309	1	1	1	1	1
43318	1	1	1	1	1
43322	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43290	1	1	1	1	1	2	2	2
43307	1	1	1	1	1	2	2	2
43309	1	1	1	1	1	2	2	2
43318	1	1	1	1	1	2	2	2
43322	1	1	1	1	1	1	1	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYE TONE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES					
43290	2	2	2	1		1	1	1	1	1
43307	2	2	2	1		1	1	1	1	1
43309	2	2	2	1		1	1	1	1	1
43318	2	2	2	1		1	1	1	1	1
43322	2	2	2	1		1	1	1	1	1

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

SEX: MALES

TEST PERIOD: WEEK 12

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 10

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43277	1	1	1	1	1
43278	1	1	1	1	1
43280	1	1	1	1	1
43281	1	1	1	1	1
43282	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR :CNA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43277	1	1	1	1	1	2	2	2
43278	1	1	1	1	1	2	2	2
43280	1	1	1	1	1	2	2	2
43281	1	2	1	1	1	1	1	1
43282	1	1	1	1	1	2	2	2

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			SKIN	EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES				
43277	2	2	2	1		1	1	1	1
43278	2	2	2	1		1	1	1	1
43280	2	2	2	1		1	1	1	1
43281	2	2	2	1		1	1	1	1
43282	2	2	2	1		1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43398	1	1	1	1	1
43405	1	1	1	1	1
43409	1	1	1	1	1
43423	1	1	1	1	1
43432	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG./KG./DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS	
						EYES	NOSE
43398	1	1	1	1	1	2	2
43405	1	1	1	1	1	2	2
43409	1	1	1	1	1	2	2
43423	1	1	1	1	1	2	2
43432	1	1	1	1	1	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN			
43398	2	2	2	1	1	1	1	1	1
43405	2	2	2	1	1	1	1	1	1
43409	2	2	2	1	1	1	1	1	1
43423	2	2	2	1	1	1	1	1	1
43432	2	2	2	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43400	1	1	1	1	1
43407	1	1	1	1	1
43413	2*	1	1	1	1
43416	1	1	1	1	1
43419	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

\* = ANIMAL VOCALIZED

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERFECTON	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	EYES	RED DEPOSITS	
							NOSE	MOUTH
43400	1	1	1	1	1	1	2	2
43407	1	1	1	1	1	1	2	2
43413	1	1	1	1	1	1	2	2
43416	1	1	1	1	1	1	2	2
43419	1	1	1	1	1	1	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			SKIN	EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES				
43400	2	2	2	1		1	1	1	1
43407	2	2	2	1		1	1	1	1
43413	2	2	2	1		1	1	1	1
43416	2	2	2	1		1	1	1	1
43419	2	2	2	1		1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43402	1	1	1	1	1
43426	1	1	1	1	1
43442	1	1	1	1	1
43446	1	1	1	1	1
43461	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	PILOEERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	EYES	NOSE	RED DEPOSITS MOUTH
43402	1	1	1	1	1	2	2	2
43426	1	1	1	1	1	2	2	2
43442	1	1	1	1	1	2	2	2
43446	1	1	1	1	1	2	2	2
43461	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BERIP

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN		
43402	2	2	2	1	1	1	1	1
43426	2	2	2	1	1	1	1	1
43442	2	2	2	1	1	1	1	1
43446	2	2	2	1	1	1	1	1
43461	2	2	2	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43401	1	1	1	1	1
43410	2	1	1	1	1
43421	1	1	1	1	1
43429	1	1	1	1	1
43430	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	FUR	PALPEBRAL APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS	
						EYES	NOSE
43401	1	1	1	1	1	2	2
43410	1	1	1	1	1	2	2
43421	1	1	1	1	1	2	2
43429	1	1	1	1	1	2	2
43430	1	1	1	1	1	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 77 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 24

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYE TONE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES					
43401	2	2	2	1		1	1	1	1	1
43410	2	2	2	1		1	1	1	1	1
43421	2	2	2	1		1	1	1	1	1
43429	2	2	2	1		1	1	1	1	1
43430	2	2	2	1		1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43289	1	1	1	1	1
43295	1	1	1	1	1
43308	1	1	1	1	1
43316	1	1	1	1	1
43326	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	EYES	NOSE	MOUTH	RED DEPOSITS
43289	1	1	1	1	1	1	2	2	2
43295	1	1	1	1	1	1	2	2	2
43308	1	1	1	1	1	1	2	2	2
43316	1	1	1	1	1	1	2	2	2
43326	1	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

- - - - -  
DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			MUSCLE TONE		
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN	EYE PROMINENCE	EYES	SKIN
43289	2	2	2	1	1	1	1	1	1
43295	2	2	2	1	1	1	1	1	1
43308	2	2	2	1	1	1	1	1	1
43316	2	2	2	1	1	1	1	1	1
43326	2	2	2	1	1	1	1	1	1

- - - - -  
OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	OBSERVATION SCORE, UNLESS STATED OTHERWISE		
			LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43285	3	1	1	1	1
43293	1	1	1	1	1
43311	2	1	1	1	1
43320	3	1	1	1	1
43340	1	1	1	1	1

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43285	1	1	1	1	1	2	2	2
43293	1	1	1	1	1	2	2	2
43311	1	1	1	1	1	2	2	2
43320	1	1	1	1	1	2	2	2
43340	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN		
43285	2	2	2	1	1	1	1	1
43293	2	2	2	1	1	1	1	1
43311	2	2	2	1	1	1	1	1
43320	2	2	2	1	1	1	1	1
43340	2	2	2	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 7B (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43290	1	1	1	1	1
43307	1	1	1	1	1
43309	1	1	1	1	1
43318	1	1	1	1	1
43322	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43290	1	1	1	1	1	2	2	2
43307	1	1	1	1	1	2	2	2
43309	1	1	1	1	1	2	2	2
43318	1	1	1	1	1	2	2	2
43322	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN			
43290	2	2	2	1	1	1	1	1	1
43307	2	2	2	1	1	1	1	1	1
43309	2	2	2	1	1	1	1	1	1
43318	2	2	2	1	1	1	1	1	1
43322	2	2	2	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43277	1	2*	1	1	1
43278	1	1	1	1	1
43280	1	1	1	1	1
43281	2	1	1	1	1
43282	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

\* = ANIMAL VOCALIZED

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	EYES	RED DEPOSITS	
							NOSE	MOUTH
43277	1	1	1	1	1	1	2	2
43278	1	1	1	1	1	1	2	2
43280	1	1	1	1	1	1	2	2
43281	1	1	1	1	1	1	2	2
43282	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYE TONE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN				
43277	2	2	2	1		1	1	1	1	1
43278	2	2	2	1		1	1	1	1	1
43280	2	2	2	1		1	1	1	1	1
43281	2	2	2	1		1	1	1	1	1
43282	2	2	2	1		1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHIA	SALIVATION
43398	1	1	1	1	1
43405	1	1	1	1	1
43409	5	1	1	1	1
43423	1	1	1	1	1
43432	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	PILOERECTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43398	1	1	1	1	1	2	2	2
43405	1	1	1	1	1	1	2	2
43409	1	1	1	1	1	2	2	2
43423	1	1	1	1	1	2	2	2
43432	1	1	1	1	1	2	2	2

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE	SKIN	EYES	MUCOUS MEMBRANES	MOUTH
	EYES	NOSE	MOUTH								
43398	2	2	2	1			1	1	1		1
43405	2	2	2	1			1	1	1		1
43409	2	2	2	1			1	1	1		1
43423	2	2	2	1			1	1	1		1
43432	2	2	2	1			1	1	1		1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43400	2	1	1	1	1
43407	1	1	2	1	1
43413	2*	2*	1	1	1
43416	1	1	1	1	1
43419	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

\* = ANIMAL VOCALIZED

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43400	1	1	1	1	1	2	2	2
43407	1	1	1	1	1	1	2	2
43413	1	1	1	1	1	2	2	2
43416	1	1	1	1	1	2	2	2
43419	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			SKIN	EYE PROMINENCE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES				
43400	2	2	2	1	1	1	1	1	1
43407	2	2	2	1	1	1	2	2	1
43413	2	2	2	1	1	1	1	1	1
43416	2	2	2	1	1	1	1	1	1
43419	2	2	2	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43402	2	1	1	1	1
43426	1	1	1	1	1
43442	1	1	1	1	1
43446	1	1	1	1	1
43461	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: FEMALES

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43402	1	1	1	1	1	2	2	2
43426	1	1	1	1	1	2	2	2
43442	1	1	1	1	1	2	2	2
43446	1	1	1	1	1	2	2	2
43461	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

ANIMAL NUMBER	CRUSTY DEPOSITS			COLOR			EYE PROMINENCE			MUSCLE TONE		
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	SKIN	EYES	SKIN	EYES	SKIN	EYES	SKIN
43402	2	2	2	1	1	1	2	1	1	1	1	1
43426	2	2	2	1	1	1	1	1	1	1	1	1
43442	2	2	2	1	1	1	1	1	1	1	1	1
43446	2	2	2	1	1	1	1	1	1	1	1	1
43461	2	2	2	1	1	1	1	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	EASE OF REMOVAL FROM CAGE	EASE OF HANDLING ANIMAL IN HAND	LACRIMATION	CHROMODACRYORRHEA	SALIVATION
43401	1	1	1	1	1
43410	1	1	1	1	1
43421	1	1	1	1	1
43429	1	1	1	1	1
43430	1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	PILOERCTION	FUR APPEARANCE	PALPEBRAL CLOSURE	RESPIRATORY RATE	RESPIRATORY CHARACTER	RED DEPOSITS		
						EYES	NOSE	MOUTH
43401	1	1	1	1	1	2	2	2
43410	1	1	1	1	1	2	2	2
43421	1	1	1	1	1	2	2	2
43429	1	1	1	1	1	2	2	2
43430	1	1	1	1	1	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

HANDLING OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 78 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 24

ANIMAL NUMBER	CRUSTY DEPOSITS				COLOR				EYE PROMINENCE	SKIN	EYE TONE	MUSCLE TONE
	EYES	NOSE	MOUTH	MUCOUS MEMBRANES	EYES	MOUTH	MUCOUS MEMBRANES	EYES				
43401	2	2	2	1				1	1	1	1	1
43410	2	2	2	1				1	1	1	1	1
43421	2	2	2	1				1	1	1	1	1
43429	2	2	2	1				1	1	1	1	1
43430	2	2	2	1				1	1	1	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43289	0.2	1	1	1	1	1	1	3
43295	0.4	1	1	1	1	1	1	3
43308	0.3	1	1	1	1	1	1	3
43316	0.5	1	1	1	1	1	1	3
43326	0.5	1	1	1	1	1	1	3
MEAN	0.4							
S.D.	0.13							
N	5							

OBSERVATION SCORE, <sup>5</sup> UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	BIZARRE/STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43289	1	3.0	0.0	0.0	1.0	0.0
43295	1	1.0	0.0	0.0	0.0	2.0
43308	1	6.0	0.0	0.0	0.0	0.0
43316	1	13.0	0.0	0.0	0.0	0.0
43326	1	5.0	0.0	1.0	1.0	1.0
MEAN		5.6	0.0	0.2	0.4	0.6
S.D.		4.56	0.00	0.45	0.55	0.89
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG./KG./DAY

TEST PERIOD: PRETEST

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43285	0.4	1	1	1	1	1	1	3
43293	0.3	1	1	1	1	1	1	3
43311	0.2	1	1	1	1	1	1	3
43320	0.3	1	1	1	1	1	1	3
43340	0.4	1	1	1	1	1	1	3

MEAN 0.3  
S.D. 0.08  
N 5  
OBSERVATION SCORE,<sup>5</sup> UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43285	1	4.0	0.0	0.0	0.0	4.0
43293	1	9.0	0.0	0.0	0.0	0.0
43311	1	20.0	0.0	1.0	0.0	0.0
43320	1	11.0	0.0	0.0	0.0	0.0
43340	1	5.0	0.0	0.0	1.0	1.0
MEAN		9.8	0.0	0.2	0.2	1.0
S.D.		6.38	0.00	0.45	0.45	1.73
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43290	0.3	1	1	1	1	1	1	3
43307	0.3	1	1	1	1	1	1	3
43309	0.3	1	1	1	1	1	1	3
43318	0.3	1	1	1	1	1	1	3
43322	0.5	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.09							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.:WIL-186012  
SPONSOR:CMA-BFRIP

TABLE 79 (WEEK - 1 PRETEST EVALUATION)  
A 90 DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43290	1	11.0	0.0	0.0	1.0	0.0
43307	1	14.0	0.0	0.0	1.0	2.0
43309	1	9.0	0.0	0.0	0.0	0.0
43318	1	13.0	0.0	0.0	1.0	0.0
43322	1	3.0	0.0	0.0	1.0	4.0
MEAN		10.0	0.0	0.0	0.8	1.2
S.D.		4.36	0.00	0.00	0.45	1.79
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.:WIL-186012  
SPONSOR:CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 79 (WEEK - 1 PRETEST EVALUATION)  
A 90 DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43277	0.3	1	1	1	1	1	1	3
43278	0.4	1	1	1	1	1	1	3
43280	0.3	1	1	1	1	1	1	3
43281	0.3	1	1	1	1	1	1	3
43282	0.3	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.04							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

TABLE 79 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43277	1	3.0	0.0	0.0	1.0	0.0
43278	1	8.0	0.0	0.0	0.0	0.0
43280	1	10.0	0.0	0.0	1.0	1.0
43281	1	9.0	0.0	1.0	1.0	4.0
43282	1	2.0	0.0	1.0	0.0	0.0
MEAN		6.4	0.0	0.4	0.6	1.0
S.D.		3.65	0.00	0.55	0.55	1.73
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43398	0.3	1	1	1	1	1	1	3
43405	0.3	1	1	1	1	1	1	3
43409	0.3	1	1	1	1	1	1	3
43423	0.3	1	1	1	1	1	1	3
43432	0.3	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.00							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (count/s)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43398	1	13.0	0.0	1.0	0.0	0.0
43405	1	8.0	0.0	1.0	0.0	0.0
43409	1	4.0	0.0	0.0	0.0	0.0
43423	1	3.0	0.0	1.0	0.0	0.0
43432	1	9.0	0.0	1.0	1.0	0.0
MEAN		7.4	0.0	0.8	0.2	0.0
S.D.		4.04	0.00	0.45	0.45	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43400	0.3	1	1	1	1	1	3
43407	0.3	1	1	1	1	1	3
43413	0.3	1	1	1	1	1	3
43416	0.3	1	1	1	1	1	3
43419	0.4	1	1	1	1	1	3
MEAN	0.3						
S.D.	0.04						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43400	1	6.0	0.0	0.0	2.0	1.0
43407	1	14.0	0.0	1.0	1.0	0.0
43413	1	2.0	0.0	0.0	1.0	7.0
43416	1	14.0	0.0	0.0	0.0	1.0
43419	1	8.0	0.0	0.0	0.0	0.0
MEAN		8.8	0.0	0.2	0.8	1.8
S.D.		5.22	0.00	0.45	0.84	2.95
N		5	5	5	5	5
OBSERVATION SCORE, UNLESS STATED OTHERWISE						

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
434402	0.4	1	1	1	1	1	3
434426	0.2	1	1	1	1	1	3
434442	0.3	1	1	1	1	1	3
434446	0.3	1	1	1	1	1	3
434461	0.3	1	1	1	1	1	3
MEAN	0.3						
S.D.	0.07						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43402	1	14.0	0.0	0.0	0.0	0.0
43426	1	11.0	0.0	2.0	1.0	0.0
43442	1	6.0	0.0	1.0	0.0	0.0
43446	1	8.0	0.0	0.0	0.0	0.0
43461	1	6.0	0.0	0.0	0.0	0.0
MEAN		9.0	0.0	0.6	0.2	0.0
S.D.		3.46	0.00	0.89	0.45	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 79 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43401	0.3	1	1	1	1	1	1	3
43410	0.3	1	1	1	1	1	1	3
43421	0.4	1	1	1	1	1	1	3
43429	0.2	1	1	1	1	1	1	3
43430	0.2	1	1	1	1	1	1	3

MEAN

0.3

S.D.

0.08

N

5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 79 (WEEK -1 PRETEST EVALUATION),  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: PRETEST

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR (counts)	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43401	1	11.0	0.0	1.0	0.0	0.0
43410	1	21.0	0.0	0.0	0.0	0.0
43421	1	6.0	0.0	0.0	1.0	0.0
43429	1	0.0	0.0	0.0	0.0	0.0
43430	1	7.0	0.0	0.0	0.0	0.0
MEAN	9.0	0.0	0.2	0.2	0.0	0.0
S.D.	7.78	0.00	0.45	0.45	0.00	0.00
N	5	5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43289	0.3	1	1	1	1	1	3
43295	0.4	1	1	1	1	1	3
43308	0.5	1	1	1	1	1	3
43316	0.4	1	1	1	1	1	3
43326	0.3	1	1	1	1	1	3
MEAN	0.4						
S.D.	0.08						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43289	1	3.0	0.0	0.0	0.0	0.0
43295	1	3.0	0.0	0.0	1.0	0.0
43308	1	8.0	0.0	0.0	0.0	0.0
43316	1	4.0	0.0	1.0	0.0	0.0
43326	1	3.0	0.0	0.0	0.0	1.0
MEAN		4.2	0.0	0.2	0.2	0.2
S.D.		2.17	0.00	0.45	0.45	0.45
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 3

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43285	0.3	1	1	1	1	1	3
43293	0.5	1	1	1	1	1	3
43311	0.4	1	1	1	1	1	3
43320	0.6	1	1	1	1	1	3
43340	0.5	1	1	1	1	1	3
MEAN	0.5						
S.D.	0.11						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	BIZARRE/STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43285	1	8.0	0.0	0.0	0.0	0.0
43293	1	7.0	0.0	0.0	0.0	0.0
43311	1	6.0	0.0	0.0	1.0	1.0
43320	1	8.0	0.0	0.0	2.0	0.0
43340	1	0.0	0.0	0.0	1.0	1.0
MEAN		5.8	0.0	0.0	0.8	0.4
S.D.		3.35	0.00	0.00	0.84	0.55
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43290	0.5	1	1	1	1	1	3
43307	0.2	1	1	1	1	1	3
43309	0.2	1	1	1	1	1	3
43318	0.3	1	1	1	1	1	3
43322	0.3	1	1	1	1	1	3

MEAN 0.3  
S.D. 0.12  
N 5  
OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

SEX: MALES

TEST PERIOD: WEEK 12

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43290	1	8.0	0.0	0.0	0.0	0.0
43307	1	6.0	0.0	0.0	2.0	0.0
43309	1	9.0	0.0	0.0	1.0	0.0
43318	1	6.0	0.0	0.0	3.0	0.0
43322	1	5.0	0.0	0.0	0.0	0.0
MEAN		6.8	0.0	0.0	1.2	0.0
S.D.		1.64	0.00	0.00	1.30	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43277	0.5	1	1	1	1	1	3
43278	0.2	1	1	1	1	1	3
43280	0.4	1	1	1	1	1	3
43281	0.3	1	1	1	1	1	3
43282	0.3	1	1	1	1	1	3

MEAN  
S.D.  
N

0.3

0.11

5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BERIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43277	1	4.0	0.0	0.0	1.0	0.0
43278	1	1.0	0.0	0.0	1.0	1.0
43280	1	5.0	0.0	0.0	0.0	1.0
43281	1	6.0	0.0	0.0	2.0	0.0
43282	1	4.0	0.0	0.0	0.0	0.0
MEAN		4.0	0.0	0.0	0.8	0.4
S.D.		1.87	0.00	0.00	0.84	0.55
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43398	0.4	1	1	1	1	1	1	3
43405	0.3	1	1	1	1	1	1	3
43409	0.3	1	1	1	1	1	1	3
43423	0.3	1	1	1	1	1	1	3
43432	0.3	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.04							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	BIZARRE/STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43398	1	13.0	0.0	2.0	0.0	0.0
43405	1	10.0	0.0	0.0	0.0	0.0
43409	1	15.0	0.0	0.0	1.0	0.0
43423	1	6.0	0.0	1.0	0.0	0.0
43432	1	15.0	0.0	0.0	0.0	0.0
MEAN		11.8	0.0	0.6	0.2	0.0
S.D.		3.83	0.00	0.89	0.45	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG./KG./DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43400	0.3	1	1	1	1	1	1	3
43407	0.3	1	1	1	1	1	1	3
43413	0.3	1	1	1	1	1	1	3
43416	0.4	1	1	1	1	1	1	3
43419	0.4	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.05							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 80 (WEEK 12 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBBCD IN RATS  
 INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY  
 TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43400	1	10.0	0.0	0.0	0.0	0.0
43407	1	10.0	0.0	0.0	0.0	0.0
43413	1	0.0	0.0	0.0	0.0	1.0
43416	1	11.0	0.0	1.0	1.0	0.0
43419	1	14.0	0.0	0.0	0.0	0.0
MEAN		9.0	0.0	0.2	0.2	0.2
S.D.		5.29	0.00	0.45	0.45	0.45
N		5	5	5	5	5
OBSERVATION SCORE, UNLESS STATED OTHERWISE						

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43402	0.4	1	1	1	1	1	1	3
43426	0.3	1	1	1	1	1	1	3
43442	0.4	1	1	1	1	1	1	3
43446	0.3	1	1	1	1	1	1	3
43461	0.3	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.05							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43402	1	14.0	0.0	0.0	1.0	0.0
43426	1	20.0	0.0	0.0	0.0	0.0
43442	1	3.0	0.0	0.0	0.0	0.0
43446	1	13.0	0.0	0.0	0.0	0.0
43461	1	3.0	0.0	0.0	0.0	0.0
MEAN		10.6	0.0	0.0	0.2	0.0
S.D.		7.44	0.00	0.00	0.45	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: WEEK 12

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43401	0.4	1	1	1	1	1	1	3
43410	0.4	1	1	1	1	1	1	3
43421	0.3	1	1	1	1	1	1	3
43429	0.4	1	1	1	1	1	1	3
43430	0.4	1	1	1	1	1	1	3

MEAN 0.4

S.D. 0.04

N 5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 80 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43401	1	16.0	0.0	0.0	0.0	0.0
43410	1	17.0	0.0	0.0	0.0	0.0
43421	1	2.0	0.0	1.0	0.0	0.0
43429	1	12.0	0.0	1.0	0.0	0.0
43430	1	6.0	0.0	0.0	0.0	0.0
MEAN		10.6	0.0	0.4	0.0	0.0
S.D.		6.47	0.00	0.55	0.00	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43289	0.2	1	1	1	1	1	3
43295	0.3	2	5	1	1	2	2
43308	0.4	1	1	1	1	1	3
43316	0.3	1	1	1	1	1	3
43326	0.4	1	1	1	1	1	3

MEAN 0.3  
S.D. 0.08  
N 5  
OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

TABLE 8.1 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 2

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43289	1	7.0	0.0	0.0	0.0	0.0
43295	1	0.0	0.0	0.0	0.0	2.0
43308	1	3.0	0.0	0.0	2.0	2.0
43316	1	5.0	0.0	0.0	0.0	0.0
43326	1	1.0	0.0	0.0	1.0	1.0
MEAN		3.2	0.0	0.0	0.6	1.0
S.D.		2.86	0.00	0.00	0.89	1.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43285	0.3	1	1	1	1	1	1	3
43293	0.4	1	1	1	1	1	1	3
43311	0.3	1	1	1	1	1	1	3
43320	0.3	1	1	1	1	1	1	3
43340	0.4	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.05							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)	SEX: MALES		
							TEST PERIOD: WEEK 16	DOSE LEVEL: 100 MG/KG/DAY	DOSE GROUP: 2
43285	1	7.0	0.0	0.0	0.0	0.0			
43293	1	9.0	0.0	1.0	0.0	0.0			
43311	1	8.0	0.0	0.0	1.0	1.0			
43320	1	8.0	0.0	0.0	1.0	0.0			
43340	1	0.0	0.0	0.0	0.0	3.0			
MEAN		6.4	0.0	0.2	0.4	0.8			
S.D.		3.65	0.00	0.45	0.55	1.30			
N		5	5	5	5	5			

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
4.3290	0.4	1	1	1	1	1	1	3
4.3307	0.2	1	1	1	1	1	1	3
4.3309	0.5	1	1	1	1	1	1	3
4.3318	0.3	1	1	1	1	1	1	3
4.3322	0.4	1	1	1	1	1	1	3

MEAN 0.4  
S.D. 0.11  
N 5  
OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43290	1	5.0	0.0	0.0	1.0	0.0
43307	1	6.0	0.0	0.0	0.0	0.0
43309	1	7.0	0.0	0.0	1.0	0.0
43318	1	10.0	0.0	0.0	2.0	0.0
43322	1	6.0	0.0	0.0	0.0	0.0
MEAN		6.8	0.0	0.0	0.8	0.0
S.D.		1.92	0.00	0.00	0.84	0.00
N		5	5	5	5	5

OBSERVATION SCORE , UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP : 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	CONVULSIONS			GAIT SCORE	AROUSAL
			CLONIC	TONIC	TREMORS		
43277	0.3	1	1	1	1	1	3
43278	0.2	1	1	1	1	1	3
43280	0.2	1	1	1	1	1	3
43281	0.3	1	1	1	1	1	3
43282	0.5	1	1	1	1	1	3

MEAN 0.3  
S.D. 0.12  
N 5  
OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE STEREO-TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43277	1	7.0	0.0	0.0	1.0	0.0
43278	1	2.0	0.0	0.0	2.0	0.0
43280	1	5.0	0.0	0.0	1.0	1.0
43281	1	10.0	0.0	1.0	1.0	0.0
43282	1	0.0	0.0	0.0	0.0	0.0
MEAN	4.8	0.0	0.2	1.0	0.2	
S.D.	3.96	0.00	0.45	0.71	0.45	
N	5	5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43338	0.2	1	1	1	1	1	3
43405	0.2	1	1	1	1	1	3
43409	0.3	1	1	1	1	1	3
43423	0.3	1	1	1	1	1	3
43432	0.3	1	1	1	1	1	3
MEAN	0.3						
S.D.	0.05						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	BIZARRE/STEREO- TYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43398	1	20.0	0.0	1.0	0.0	0.0
43405	1	14.0	0.0	0.0	0.0	0.0
43409	1	12.0	0.0	0.0	0.0	0.0
43423	1	4.0	0.0	1.0	0.0	0.0
43432	1	21.0	0.0	0.0	0.0	0.0
MEAN		14.2	0.0	0.4	0.0	0.0
S.D.		6.87	0.00	0.55	0.00	0.00
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRTP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43400	0.4	1	1	1	1	1	1	3
43407	0.3	1	1	1	1	1	1	3
43413	0.3	1	1	1	1	1	1	3
43416	0.3	1	1	1	1	1	1	3
43419	0.3	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.04							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL 186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43400	1	17.0	0.0	1.0	0.0	0.0
43407	1	9.0	0.0	1.0	0.0	0.0
43413	1	0.0	0.0	0.0	1.0	3.0
43416	1	16.0	0.0	1.0	0.0	0.0
43419	1	13.0	0.0	0.0	0.0	0.0
MEAN		11.0	0.0	0.6	0.2	0.6
S.D.		6.89	0.00	0.55	0.45	1.34
N		5	5	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS		GAIT SCORE	AROUSAL
				CLONIC	TONIC		
43442	0.4	1	1	1	1	1	3
43426	0.3	1	1	1	1	1	3
43442	0.3	1	1	1	1	1	3
43446	0.3	1	1	1	1	1	3
43461	0.3	1	1	1	1	1	3
MEAN	0.3						
S.D.	0.04						
N	5						

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)	GROOMING (counts)	URINATION (counts)	DEFECATION (counts)
43402	1	17.0	0.0	0.0	0.0	0.0
43426	1	10.0	0.0	2.0	0.0	0.0
43442	1	4.0	0.0	0.0	0.0	0.0
43446	1	14.0	0.0	0.0	0.0	0.0
43461	1	8.0	0.0	0.0	0.0	0.0
MEAN		10.6	0.0	0.4	0.0	0.0
S.D.		5.08	0.00	0.89	0.00	0.00
N		5	5	5	5	5
OBSERVATION SCORE, UNLESS STATED OTHERWISE						

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG / KG/DAY

TEST PERIOD: WEEK 16

ANIMAL NUMBER	TIME TO 1ST STEP (seconds)	MOBILITY	GAIT	CONVULSIONS			GAIT SCORE	AROUSAL
				CLONIC	TONIC	TREMORS		
43401	0.3	1	1	1	1	1	1	3
43410	0.4	1	1	1	1	1	1	3
43421	0.3	1	1	1	1	1	1	3
43429	0.3	1	1	1	1	1	1	3
43430	0.2	1	1	1	1	1	1	3
MEAN	0.3							
S.D.	0.07							
N	5							

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 81 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

OPEN FIELD OBSERVATIONS

DOSE GROUP: 4		SEX: FEMALES	
DOSE LEVEL:	1000 MG/KG/DAY	TEST PERIOD:	WEEK 16
ANIMAL NUMBER	BIZARRE/STEREOTYPIC BEHAVIOR	REARING (counts)	BACKING (counts)
43401	1	14.0	0.0
43410	1	21.0	0.0
43421	1	1.0	0.0
43429	1	12.0	0.0
43430	1	9.0	0.0
MEAN	11.4	0.0	0.2
S.D.	7.30	0.00	0.45
N	5	5	5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43289	2	2	2	2	2
43295	2	2	2	2	2
43308	2	2	2	2	2
43316	2	2	2	2	2
43326	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43289	2	2	2	2	1
43295	2	2	2	2	1
43308	2	2	2	2	1
43316	2	2	2	2	1
43326	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH	OLFACTORY ORIENTATION	ORIENTATION
43285	2	2	2	2	2	2	2
43293	2	2	2	2	2	2	2
43311	2	2	2	2	3	2	2
43320	2	2	2	2	2	2	2
43340	2	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43285	2	2	2	2	1
43293	2	2	2	2	1
43311	2	2	2	2	1
43320	2	2	2	2	2
43340	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43290	2	2	2	2	2	2
43307	2	2	2	2	2	2
43309	2	2	2	2	2	2
43318	2	2	2	2	2	2
43322	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43290	2	2	2	2	1
43307	2	2	2	2	1
43309	2	2	2	2	1
43318	2	2	2	2	1
43322	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43277	2	2	2	2	2	2
43278	2	2	2	2	2	2
43280	2	2	2	2	2	2
43281	2	2	2	2	2	2
43282	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43277	2	2	2	2	1
43278	2	2	2	2	1
43280	2	2	2	2	1
43281	2	2	2	2	1
43282	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION	
					2	2
43398	2	2	2	2	2	2
43405	2	2	2	2	2	2
43409	2	2	2	2	2	2
43423	2	2	2	2	2	2
43432	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43398	2	2	2	2	1
43405	2	2	2	2	1
43409	2	2	1	2	2
43423	2	2	2	2	1
43432	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION	
					2	2
43400	2	2	2	2	2	2
43407	2	2	2	2	2	2
43413	2	2	2	2	2	2
43416	2	2	2	2	2	2
43419	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX	
					2	1
43400	2	2	2	2	2	1
43407	2	2	2	2	2	1
43413	2	2	2	2	2	1
43416	2	2	2	2	2	1
43419	2	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43402	2	2	2	2	2
43426	2	2	3	3	2
43442	2	2	2	2	2
43446	2	2	2	2	2
43461	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEx
43402	2	2	2	2	1
43426	2	2	2	2	1
43442	2	2	2	2	1
43446	2	2	2	2	1
43461	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: PRETEST

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH	OLFACTORY ORIENTATION
43401	2	2	2	2	2	2
43410	2	2	2	2	2	2
43421	2	2	2	2	2	2
43429	2	2	2	2	2	2
43430	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 82 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX	
					TEST PERIOD: PRETEST	SEX: FEMALES
43401	2	2	2	2	1	
43410	2	2	2	2	1	
43421	2	2	2	2	1	
43429	2	2	2	2	1	
43430	2	2	2	2	1	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBV3.1  
11/16/2000  
R:07/18/2001

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION	
					2	2
43289	2	2	2	2	2	2
43295	2	2	2	2	2	2
43308	2	2	2	2	2	2
43316	2	2	2	2	2	2
43326	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 2

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX	
					TEST PERIOD: WEEK 12	DOSE LEVEL: 0 MG/KG/DAY
43289	2	2	2	2	2	1
43295	2	2	2	2	2	1
43308	2	2	2	2	2	1
43316	2	2	2	2	2	1
43326	2	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43285	2	2	2	2	2
43293	2	2	2	2	2
43311	1	1	2	2	2
43320	2	2	2	2	2
43340	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX	
					TEST PERIOD: WEEK 12	SEX: MALES
43285	2	2	2	2	1	
43293	2	2	2	2	1	
43311	2	2	2	2	1	
43320	2	2	2	2	1	
43340	2	2	2	2	1	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION	
					3	2
43290	3	2	2	3	2	2
43307	2	2	2	2	2	2
43309	2	2	2	2	2	2
43318	2	2	2	2	2	2
43322	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 6

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43290	2	2	2	2	1
43307	2	2	2	2	1
43309	2	2	2	2	1
43318	2	2	2	2	1
43322	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43277	2	2	2	2	2
43278	2	2	2	2	2
43280	2	2	2	2	2
43281	2	2	2	2	2
43282	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012

SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEx
43277	2	2	2	2	1
43278	2	2	2	2	1
43280	2	2	2	2	1
43281	2	2	2	2	1
43282	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 8

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43398	2	2	2	2	2
43405	2	2	2	2	2
43409	2	2	2	2	2
43423	2	2	2	2	2
43432	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 10

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX	
					1	2
43398	2	2	2	2	1	1
43405	2	2	2	2	1	1
43409	2	2	2	2	1	1
43423	2	2	2	2	1	1
43432	2	2	2	2	1	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRP

SENSORY OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 11

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	
				Olfactory	Orientation
43400	2	2	2	2	2
43407	2	2	2	2	2
43413	2	2	2	2	2
43416	2	2	2	2	2
43419	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43400	2	2	2	2	1
43407	2	2	2	2	1
43413	2	2	2	2	1
43416	2	2	2	2	1
43419	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BRIP

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43402	2	2	2	2	2
43426	2	2	2	2	2
43442	2	2	2	2	2
43446	2	2	2	2	2
43461	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRP

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43402	2	2	2	2	1
43426	2	2	2	2	1
43442	2	2	2	2	1
43446	2	2	2	2	1
43461	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43401	2	2	2	2	2
43410	2	2	1	2	2
43421	2	2	2	2	2
43429	2	2	2	2	2
43430	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 83 (WEEK 12 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1,000 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43401	2	2	2	2	1
43410	2	2	2	2	1
43421	2	2	2	2	1
43429	2	2	2	2	1
43430	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43289	2	2	2	2	2
43295	2	2	2	2	2
43308	2	2	2	2	2
43316	2	2	2	2	2
43326	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43289	2	2	2	2	1
43295	2	2	2	2	1
43308	2	2	2	2	1
43316	2	2	2	2	1
43326	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43285	2	2	2	2	2
43293	2	2	2	2	2
43311	2	2	2	2	2
43320	2	2	2	2	2
43340	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43285	2	2	2	2	1
43293	2	2	2	2	1
43311	2	2	2	2	1
43320	2	2	2	2	1
43340	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43290	2	2	2	2	2	2
43307	1	1	2	2	2	2
43309	2	2	2	2	2	2
43318	2	2	2	2	2	2
43322	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43290	2	2	2	2	1
43307	2	2	2	2	1
43309	2	2	2	2	1
43318	2	2	2	2	1
43322	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PAGE 7

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43277	2	2	2	2	2	2
43278	2	2	2	2	2	2
43280	2	2	2	2	2	2
43281	2	2	2	2	2	2
43282	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43277	2	2	2	2	1
43278	2	2	2	2	1
43280	2	2	2	2	1
43281	2	2	2	2	1
43282	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43398	2	2	2	2	2	2
43405	2	2	2	2	2	2
43409	2	2	2	2	2	2
43423	2	2	2	2	2	2
43432	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43398	2	2	2	2	1
43405	2	2	2	2	1
43409	2	2	2	2	1
43423	2	2	2	2	1
43432	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	OLFACTORY ORIENTATION
43400	2	2	2	2	2
43407	2	2	2	2	2
43413	3*	3*	2	3	2
43416	2	2	2	2	2
43419	2	2	2	2	2

OBSERVATION SCORE UNLESS STATED OTHERWISE

\* = ANIMAL VOCALIZED

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43400	2	2	2	2	1
43407	2	2	2	2	1
43413	2	2	2	2	1
43416	2	2	2	2	1
43419	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP:	3	SEX: FEMALE
DOSE LEVEL:	300 MG/KG/DAY	
TEST PERIOD:	WEEK 16	
ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE
43402	2	2
43426	2	2
43442	2	2
43446	2	2
43461	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43402	2	2	2	2	1
43426	2	2	2	2	1
43442	2	2	2	2	1
43446	2	2	2	2	1
43461	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	APPROACH RESPONSE	TOUCH RESPONSE	STARTLE RESPONSE	TAIL PINCH RESPONSE	PINCH ORIENTATION	OLFACTORY ORIENTATION
43401	2	2	2	2	2	2
43410	2	2	2	2	2	2
43421	2	2	2	2	2	2
43429	2	2	2	2	2	2
43430	2	2	2	2	2	2

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 84 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

SENSORY OBSERVATIONS

ANIMAL NUMBER	PUPIL RESPONSE	EYEBLINK RESPONSE	FORELIMB EXTENSION	HINDLIMB EXTENSION	AIR RIGHTING REFLEX
43401	2	2	2	2	1
43410	2	2	2	2	1
43421	2	2	2	2	1
43429	2	2	2	2	1
43430	2	2	2	2	1

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012

SPONSOR : CMA-BFRIP

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)						
		1	2	3	MEAN	S.D.	1	2	3	MEAN	S.D.
43289	3	600.	550.	500.	550.	50.0	275.	325.	300.	300.	25.0
43295	3	625.	700.	500.	608.	101.0	300.	425.	250.	325.	90.1
43308	3	400.	500.	575.	492.	87.8	200.	200.	225.	208.	14.4
43316	3	575.	500.	600.	558.	52.0	325.	250.	300.	292.	38.2
43326	3	475.	425.	500.	467.	38.2	225.	200.	225.	217.	14.4
		MEAN			535.0		MEAN			268.4	
		S.D.			56.03		S.D.			52.56	
		N			5		N			5	
OBSERVATION SCORE, UNLESS STATED OTHERWISE											

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43289	120.0	88.	79.	84.	6.4
43295	120.0	109.	106.	108.	2.1
43308	17.7	93.	56.	75.	26.2
43316	120.0	82.	58.	70.	17.0
43326	120.0	87.	73.	80.	9.9
MEAN	99.5	83.4			
S.D.	45.75	14.72			
N	5	5			

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTDISPLAY (mm)		MEAN S.D.
		1	2	
43285	120.0	89.	82.	86. 4.9
43293	120.0	86.	74.	80. 8.5
43311	120.0	100.	76.	88. 17.0
43320	120.0	90.	74.	82. 11.3
43340	120.0	79.	81.	80. 1.4
MEAN	120.0			83.2
S.D.	0.00			3.63
N	5			5

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
		MEAN	S.D.		MEAN	S.D.	
43290	3	600.	650.	550.	50.0	200.	275.
43307	3	625.	850.	675.	717.	118.1	325.
43309	3	600.	700.	650.	50.0	200.	200.
43318	3	625.	750.	575.	650.	50.0	300.
43322	3	475.	575.	600.	550.	66.1	125.
					600.	66.1	200.
					633.4	62.47	251.6
		MEAN	S.D.	N			
		633.4	62.47	5			
		S.D.					
		62.47					
		N					
		5					
		OBSERVATION SCORE, UNLESS STATED OTHERWISE					

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43290	14.5	51.	31.	41.	14.1
43307	120.0	80.	75.	78.	3.5
43309	120.0	73.	72.	73.	0.7
43318	120.0	69.	60.	65.	6.4
43322	120.0	71.	73.	72.	1.4
MEAN	98.9	65.8			
S.D.	47.18	14.62			
N	5	5			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: MALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)						
		1	2	3	MEAN	S.D.	1	2	3	MEAN	S.D.
43277	3	550.	525.	600.	558.	38.2	225.	400.	375.	333.	94.6
43278	3	475.	500.	500.	492.	14.4	325.	250.	225.	267.	52.0
43280	3	600.	675.	575.	617.	52.0	300.	350.	250.	300.	50.0
43281	3	400.	500.	525.	475.	66.1	200.	175.	225.	200.	25.0
43282	3	700.	800.	675.	725.	66.1	300.	325.	325.	317.	14.4
		MEAN			573.4		MEAN			283.4	
		S.D.					S.D.			52.65	
		N					N			5	
OBSERVATION SCORE, UNLESS STATED OTHERWISE											

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43277	120.0	56.	57.	57.	0.7
43278	56.1	53.	29.	41.	17.0
43280	120.0	94.	75.	85.	13.4
43281	63.5	50.	52.	51.	1.4
43282	120.0	102.	108.	105.	4.2
MEAN	95.9	67.8			
S.D.	33.08	26.44			
N	5	5			

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

## NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
43398	3	400.	550.	600.	517.	104.1	200.
43405	3	400.	475.	600.	492.	101.0	200.
43409	3	625.	525.	500.	550.	66.1	300.
43423	3	375.	450.	400.	408.	38.2	225.
43432	3	525.	475.	500.	500.	25.0	200.
						275.	275.
						300.	325.
						300.	300.
						175.	200.
						200.	200.
						275.	300.
						258.	258.
							52.0
		MEAN			MEAN		
		493.4			256.6		
		S.D.			S.D.		
		N			N		
		OBSERVATION SCORE, UNLESS STATED OTHERWISE			5		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSPAN (mm)		
		1	2	MEAN
43398	27.8	52.	54.	53.
43405	10.9	30.	30.	30.
43409	120.0	59.	57.	58.
43423	6.0	73.	49.	61.
43432	120.0	55.	28.	42.
MEAN	56.9			48.8
S.D.	58.13			12.76
N	5			5

PROJECT NO. :WIL-186012

SPONSOR :CMA-BFRIP  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

NEUROMUSCULAR OBSERVATIONS

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1		2	3	1	2
		MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
43400	3	400.	550.	600.	517.	104.1	325.
43407	3	400.	450.	500.	450.	50.0	300.
43413	3	575.	650.	675.	633.	52.0	250.
43416	3	500.	750.	625.	625.	125.0	200.
43419	3	475.	625.	600.	567.	80.4	225.
						200.	175.
						192.	142.
MEAN		558.4		255.2		53.17	
S.D.		76.71		53.17		5	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSPAN (mm)	
		1	2
43400	120.0	77.	64.
43407	120.0	16.	16.
43413	120.0	73.	70.
43416	120.0	75.	56.
43419	9.8	71.	52.
MEAN	98.0		57.4
S.D.	49.28		23.49
N	5		5

TABLE 85 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

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DOSE GROUP: 3

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3		SEX: FEMALES		HINDLIMB FOOTSPAN (mm)		
DOSE LEVEL: 300 MG/KG/DAY		TEST PERIOD: PRETEST		ROTAROD PERFORMANCE (seconds)		MEAN S.D.
ANIMAL NUMBER				1	2	
43402		20.6		62.	60.	61. 1.4
43426		120.0		61.	38.	50. 16.3
43442		25.5		80.	43.	62. 26.2
43446		35.4		20.	37.	29. 12.0
43461		120.0		59.	77.	68. 12.7
MEAN		64.3		54.0		
S.D.		51.13		15.41		
N		5		5		

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
43401	3	500.	525.	517.	14.4	300.	250.
43410	3	500.	500.	517.	28.9	350.	300.
43421	3	650.	625.	600.	66.1	200.	225.
43429	3	400.	375.	400.	392.	175.	200.
43430	3	650.	675.	500.	94.6	200.	225.
MEAN					526.8	251.6	
S.D.					87.06	37.51	
N					5	5	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 85 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4		SEX: FEMALES		HINDLIMB FOOTSPAN (mm)		
ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	1	2	MEAN	S.D.	
43401	120.0	80.	69.	75.	7.8	
43410	120.0	25.	26.	26.	0.7	
43421	120.0	66.	89.	78.	16.3	
43429	87.8	35.	28.	32.	4.9	
43430	120.0	48.	40.	44.	5.7	
MEAN	113.6	51.0				
S.D.	14.40	24.19				
N	5	5				

PFOBv3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
43289	3	1175.	1300.	1425.	1300.	125.0	1025.
43295	3	1775.	1525.	1775.	1692.	144.3	1200.
43308	3	400.	575.	900.	625.	253.7	700.
43316	3	1500.	1225.	800.	1175.	352.7	1000.
43326	3	1525.	1775.	1350.	1550.	213.6	1300.
					1268.4		1005.0
					S.D.		309.85
					N		5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1		SEX: MALES	HINDLIMB FOOTSPAN (mm)			
DOSE LEVEL: 0 MG/KG/DAY	TEST PERIOD: WEEK 12		ROTAROD PERFORMANCE (seconds)	1	2	MEAN S.D.
43289	40.9		104.	90.	97.	9.9
43295	120.0		124.	123.	124.	0.7
43308	12.7		101.	83.	92.	12.7
43316	120.0		83.	83.	83.	0.0
43326	65.9		121.	107.	114.	9.9
MEAN	71.9		102.0			
S.D.	47.77		16.69			
N	5		5			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
		MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
43285	3	1025.	800.	825.	883.	123.3	625.
43293	3	1650.	950.	1275.	1292.	350.3	925.
43311	3	475.	400.	425.	433.	38.2	550.
43320	3	1125.	925.	1150.	1067.	123.3	650.
43340	3	1400.	1550.	1650.	1533.	125.8	900.
						1041.6	798.2
						418.44	91.26
						5	

MEAN  
S.D.  
N  
OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43285	3.7	63.	73.	68.	7.1
43293	2.0	75.	57.	66.	12.7
43311	30.5	53.	72.	63.	13.4
43320	120.0	116.	107.	112.	6.4
43340	64.1	99.	103.	101.	2.8
MEAN	44.1	82.0			
S.D.	49.37	22.77			
N	5				

PROJECT NO : WIL-186012

SPONSOR : CMA - BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3		SEX: MALES		HINDLIMB GRIP STRENGTH (grams)							
DOSE LEVEL: 300 MG/KG/DAY		TEST PERIOD: WEEK 12		FORELIMB GRIP STRENGTH (grams)							
ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	1	2	3	MEAN	S.D.	1	2	3	MEAN	S.D.
43290	3	1600.	700.	600.	967.	550.8	925.	1275.	1400.	1200.	246.2
43307	3	1000.	1250.	1575.	1275.	288.3	525.	900.	925.	783.	224.1
43309	3	1675.	1825.	1350.	1617.	242.8	1000.	900.	925.	942.	52.0
43318	3	1000.	950.	975.	975.	25.0	1125.	1125.	600.	950.	303.1
43322	3	1075.	1125.	1475.	1225.	217.9	1025.	1100.	725.	950.	198.4
						MEAN		1211.8		965.0	
		S.D.		266.63		S.D.		149.44		5	
OBSERVATION SCORE, UNLESS STATED OTHERWISE											

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43290	16.9	52.	45.	49.	4.9
43307	77.6	49.	68.	59.	13.4
43309	102.2	108.	96.	102.	8.5
43318	61.6	52.	57.	55.	3.5
43322	7.0	59.	57.	58.	1.4
				64.6	
		53.1		21.27	
		40.37			
		5			

PROJECT NO.: WII-196012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)						
		1	2	3	MEAN	S.D.	1	2	3	MEAN	S.D.
43277	3	2025.	1250.	1325.	1533.	427.4	650.	1775.	1150.	1192.	563.7
43278	3	1500.	1200.	1750.	1483.	275.4	1025.	725.	625.	792.	208.2
43280	3	1425.	1100.	1050.	1192.	203.6	850.	425.	1050.	775.	319.2
43281	3	1000.	1000.	700.	900.	173.2	1450.	1050.	750.	1083.	351.2
43282	3	1150.	1000.	1925.	1358.	496.4	1150.	825.	975.	983.	162.7
		MEAN			1293.2		MEAN			965.0	
		S.D.			256.21		S.D.			181.53	
		N			5		N			5	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)	
		1	2
43277	31.5	90.	91.
43278	112.1	53.	60.
43280	31.3	106.	99.
43281	120.0	80.	74.
43282	19.8	104.	77.
MEAN	62.9	84.4	
S.D.	48.79	16.46	
N	5	5	

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1		SEX: FEMALES		HINDLIMB GRIP STRENGTH (grams)					
DOSE LEVEL: 0 MG/KG/DAY		TEST PERIOD: WEEK 12		FORELIMB GRIP STRENGTH (grams)		HINDLIMB GRIP STRENGTH (grams)		HINDLIMB GRIP STRENGTH (grams)	
ANIMAL NUMBER	EXTENSOR STRENGTH			1		2		3	
		MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
43398	3	775.	425.	475.	558.	189.3	500.	650.	250.
43405	3	850.	900.	775.	842.	62.9	700.	825.	1050.
43409	3	1025.	650.	625.	767.	224.1	600.	575.	1000.
43423	3	1250.	1400.	925.	1192.	242.8	500.	725.	725.
43432	3	650.	550.	600.	50.0	450.	725.	700.	625.
						791.8		671.6	
		MEAN	S.D.			252.36		142.97	
		N				5			

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 12

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43398	25.3	54.	59.	57.	3.5
43405	61.0	75.	71.	73.	2.8
43409	46.9	73.	66.	70.	4.9
43423	120.0	90.	78.	84.	8.5
43432	18.9	72.	58.	65.	9.9
MEAN	54.4			69.8	
S.D.	40.34			9.98	
N	5			5	

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH			FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)				
	1	2	3	MEAN	S.D.		1	2	3	MEAN	S.D.
43400	3	450.	400.	425.	25.0		625.	575.	700.	633.	62.9
43407	3	325.	925.	400.	550.	326.9	400.	525.	725.	550.	163.9
43413	3	1425.	875.	1025.	1108.	284.3	825.	625.	900.	783.	142.2
43416	3	775.	1925.	1550.	1417.	586.5	725.	725.	675.	708.	28.9
43419	3	1125.	975.	1250.	1117.	137.7	1200.	525.	1175.	967.	382.7
MEAN							923.4			728.2	
S.D.							419.23			159.10	
N							5				

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSPAN (mm)	
		1	2
43400	21.2	67.	34.
43407	35.1	29.	42.
43413	38.4	96.	105.
43416	120.0	94.	83.
43419	22.8	72.	85.
MEAN	47.5	71.2	
S.D.	41.21	26.99	
N	5	5	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	MEAN	S.D.	1
43402	3	1075.	1600.	1325.	1333.	262.6	475.
43426	3	1525.	625.	500.	883.	559.2	875.
43442	3	725.	1075.	675.	825.	217.9	900.
43446	3	1300.	600.	600.	833.	404.1	750.
43461	3	825.	1125.	750.	900.	198.4	600.
MEAN					954.8		
S.D.					213.82		
N					5		

OBSERVATION SCORE, UNLESS STATED OTHERWISE

810.0

120.68

5

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		
		1	2	MEAN
43402	45.8	71.	60.	66.
43426	3.2	61.	43.	52.
43442	76.7	85.	88.	87.
43446	120.0	81.	68.	75.
43461	120.0	98.	76.	87.
MEAN	73.1	73.4		
S.D.	50.11	14.88		
N	5	5		

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH			FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)			
	1	2	3	MEAN	S.D.	1	2	3	MEAN	S.D.
43401	3	800.	1075.	875.	175.0	800.	750.	575.	708.	118.1
43410	3	1350.	1050.	600.	1000.	377.5	800.	650.	783.	125.8
43421	3	1400.	1325.	1400.	1375.	43.3	925.	25.	650.	533.
43429	3	600.	475.	600.	558.	72.2	775.	900.	650.	461.2
43430	3	925.	775.	950.	883.	94.6	675.	625.	1100.	800.
MEAN				938.2					719.8	
S.D.				294.20					110.12	
N				5					5	

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRP

TABLE 86 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

SEX: FEMALES

TEST PERIOD: WEEK 12

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSPAN (mm)		
		1	2	MEAN S.D.
43401	30.1	106.	80.	93. 18.4
43410	16.0	47.	31.	39. 11.3
43421	120.0	125.	110.	118. 10.6
43429	120.0	85.	44.	65. 29.0
43430	120.0	103.	90.	97. 9.2
MEAN	81.2	82.4		
S.D.	53.34	30.74		
N	5	5		

PFOBV3.1  
11/16/2000  
R:07/18/2001

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATE  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY D

## NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE GROUP: 1 MC/MG/DAY

BUSE LEVEL: 0 MG/KG/DAY  
TEST REBTOD: WEEK 16

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH			FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
	1		2	3	MEAN	S.D.	1	2	3
	MEAN	S.D.		MEAN	S.D.	MEAN	S.D.		
43289	1000.	1050.		925.	992.	62.9	400.	250.	725.
43295	1050.	1300.		1175.	1175.	125.0	825.	675.	500.
43308	725.	600.		1050.	792.	232.3	575.	400.	450.
43316	1475.	1200.		1025.	1233.	226.8	325.	400.	325.
43326	1025.	1225.		1050.	1100.	109.0	350.	500.	875.
									575.
MEAN							1058.4		505.0
S.D.							174.06		120.70
N							5		

OBSERVATION SCORE: UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 8.7 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1		SEX: MALES		HINDLIMB FOOTSPRAY (mm)			
DOSE LEVEL: 0 MG/KG/DAY	TEST PERIOD: WEEK 16	ROTAROD PERFORMANCE		1		2	
		ANIMAL NUMBER	(seconds)	MEAN		S.D.	
43289		43289	3.7	66.	67.	67.	0.7
		43295	120.0	98.	94.	96.	2.8
		43308	5.5	60.	64.	62.	2.8
		43316	120.0	50.	51.	51.	0.7
		43326	8.4	111.	107.	109.	2.8
				51.5		77.0	
				S.D.		24.42	
				N		5	



TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSPRAY (mm)		MEAN	S.D.
		1	2		
43285	18.3	35.	37.	36.	1.4
43293	96.9	59.	61.	60.	1.4
43311	2.5	86.	84.	85.	1.4
43320	120.0	64.	58.	61.	4.2
43340	16.8	57.	54.	56.	2.1
MEAN	50.9	50.9	59.6		
S.D.	53.52	53.52	17.44		
N	5	5	5		

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3 DOSE LEVEL: 300 MG/KG/DAY TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	1	2	3
		MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
43290	3	1100.	400.	633.	404.1	600.	275.
43307	3	1050.	800.	917.	125.8	375.	250.
43309	3	1350.	1500.	1675.	1508.	162.7	525.
43318	3	725.	425.	700.	617.	166.5	400.
43322	3	1375.	1250.	775.	1133.	316.6	600.
		961.6				445.0	
		MEAN				120.42	
		S.D.					
		N					
OBSERVATION SCORE, UNLESS STATED OTHERWISE							
5							

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43290	53.7	22.	24.	23.	1.4
43307	79.7	47.	54.	51.	4.9
43309	29.8	80.	84.	82.	2.8
43318	70.3	59.	64.	62.	3.5
43322	44.9	57.	59.	58.	1.4
MEAN	55.7	55.2			
S.D.	19.88	21.37			
N	5	5			

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4		DOSE LEVEL: 1000 MG/KG/DAY		SEX: MALES	
		TEST PERIOD: WEEK 16			
ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)
		1	2	3	
43277	3	275.	550.	400.	137.7
43278	3	750.	700.	675.	708.
43280	3	1175.	1100.	950.	1075.
43281	3	1000.	450.	950.	114.6
43282	3	1400.	1700.	1525.	1542.
					150.7
MEAN				906.6	
S.D.				427.64	
N				5	
OBSERVATION SCORE, UNLESS STATED OTHERWISE					

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTDISPLAY (mm)		MEAN	S.D.
		1	2		
43277	12.0	51.	55.	53.	2.8
43278	8.3	32.	32.	32.	0.0
43280	23.7	59.	53.	56.	4.2
43281	120.0	36.	34.	35.	1.4
43282	9.6	80.	70.	75.	7.1
MEAN	34.7			50.2	
S.D.	48.06			17.46	
N	5			5	



PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 1

DOSE LEVEL: 0 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		
		1	2	MEAN S.D.
43398	120.0	46.	35.	41. 7.8
43405	120.0	68.	59.	64. 6.4
43409	120.0	47.	42.	45. 3.5
43423	120.0	50.	48.	49. 1.4
43432	43.2	32.	26.	29. 4.2
MEAN	104.6		45.6	
S.D.	34.35		12.72	
N	5		5	

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43400	84.6	45.	35.	40.	7.1
43407	10.6	17.	14.	16.	2.1
43413	120.0	59.	53.	56.	4.2
43416	120.0	59.	59.	59.	0.0
43419	11.6	9.	13.	11.	2.8
MEAN	69.4	36.4			
S.D.	55.11	22.19			
N	5	5			

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATE  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

- - - - -

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: 16 WEEKS

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

DOSE GROUP: 3

DOSE LEVEL: 300 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSLAP (mm)		MEAN	S.D.
		1	2		
43402	120.0	50.	60.	55.	7.1
43426	120.0	31.	27.	29.	2.8
43442	3.0	55.	64.	60.	6.4
43446	120.0	47.	31.	39.	11.3
43461	120.0	45.	44.	45.	0.7
MEAN	96.6	45.6			
S.D.	52.32	12.40			
N	5	5			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	HINDLIMB EXTENSOR STRENGTH	FORELIMB GRIP STRENGTH (grams)			HINDLIMB GRIP STRENGTH (grams)		
		1	2	3	MEAN	S.D.	1
43401	3	950.	575.	808.	203.6	625.	450.
43410	3	400.	325.	450.	392.	250.	375.
43421	3	1300.	750.	650.	900.	350.0	450.
43429	3	600.	500.	550.	550.	375.	400.
43430	3	1050.	1125.	1300.	1158.	128.3	275.
					761.6		
MEAN							445.0
S.D.							117.48
N							5

OBSERVATION SCORE, UNLESS STATED OTHERWISE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 87 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

NEUROMUSCULAR OBSERVATIONS

ANIMAL NUMBER	ROTAROD PERFORMANCE (seconds)	HINDLIMB FOOTSTELLAY (mm)	
		1	2
43401	30.7	63.	51.
43410	120.0	27.	26.
43421	120.0	41.	45.
43429	120.0	43.	50.
43430	120.0	44.	42.
		MEAN	S.D.
		102.1	43.4
		S.D.	10.81
		N	5

PFOBV3.1  
11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1		SEX: MALES		BODY TEMPERATURE (degrees C)			BODY WEIGHT (grams)		
ANIMAL NUMBER	CATALEPSY (seconds)								
43289	0.5			38.4			227.5		
43295	0.7			38.1			249.9		
43308	0.6			37.9			221.4		
43316	0.7			38.3			227.0		
43326	0.4			38.2			205.4		
MEAN	0.6			38.2			226.2		
S.D.	0.13			0.19			15.97		
N	5			5			5		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2		SEX: MALES		BODY TEMPERATURE (degrees C)			BODY WEIGHT (grams)		
DOSE LEVEL: 100 MG/KG/DAY		TEST PERIOD: PRETEST		CATALEPSY (seconds)					
ANIMAL NUMBER									
43285		0.4		38.7			245.0		
43293		0.5		38.8			236.0		
43311		1.0		37.8			226.1		
43320		0.5		37.7			230.2		
43340		0.8		38.0			183.3		
				38.2					
MEAN		0.6		38.3			224.1		
S.D.		0.25		0.47			23.90		
N		5		5			5		

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP:	3	SEX:	MALES
DOSE LEVEL:	300 MG/KG/DAY	TEST PERIOD:	PRETEST
ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43290	0.4	37.8	209.8
43307	0.8	38.2	230.2
43309	0.6	38.0	274.9
43318	0.7	38.6	249.7
43322	0.6	38.5	226.5
MEAN	0.6	38.2	238.2
S.D.	0.15	0.33	24.93
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43277	0.6	38.4	206.6
43278	0.4	38.1	228.7
43280	0.8	37.6	234.6
43281	0.4	38.4	234.4
43282	0.6	38.0	205.3
MEAN	0.6	38.1	221.9
S.D.	0.17	0.33	14.78
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)		BODY WEIGHT (grams)
		MEAN	S.D.	
43398	0.6	38.5		158.8
43405	0.6	38.1		185.2
43409	0.7	37.8		161.6
43423	0.5	38.2		168.0
43432	0.4	38.5		187.2
MEAN	0.6	38.2		172.2
S.D.	0.11	0.29		13.26
N	5	5		5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: PRETEST

SEX: FEMALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43400	0.7	38.5	190.1
43407	0.6	38.6	167.0
43413	0.5	38.5	164.4
43416	0.4	38.8	167.7
43419	0.6	38.2	163.1
MEAN	0.6	38.5	170.5
S.D.	0.11	0.22	11.14
N	5	5	5

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 3		SEX: FEMALES		BODY TEMPERATURE (degrees C)			BODY WEIGHT (grams)		
DOSE LEVEL:	300 MG/KG/DAY	TEST PERIOD:	PRETEST	ANIMAL NUMBER	CATALEPSY (seconds)				
				43402	0.6	38.6	194.8		
				43426	0.7	38.8	151.2		
				43442	0.7	38.5	170.7		
				43446	0.5	38.8	151.2		
				43461	0.5	38.4	184.2		
MEAN		0.6	38.6	170.4			19.51		
S.D.		0.10	0.18	5			5		
N		5							

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4  
DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: PRETEST

TABLE 88 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)		BODY WEIGHT (grams)
		MEAN	S.D.	
43401	0.6	38.0		202.0
43410	0.5	38.9		146.6
43421	0.7	38.7		185.7
43429	0.7	38.5		174.9
43430	0.5	38.5		183.0
		38.5		178.4
MEAN	0.6	38.5		20.34
S.D.	0.10	0.33		5
N	5	5		5

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43289	0.4	37.9	568.5
43295	0.6	38.3	590.0
43308	0.3	38.3	566.1
43316	0.3	39.4	505.8
43326	0.3	38.5	505.6
MEAN	0.4	38.5	547.2
S.D.	0.13	0.56	39.01
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2

DOSE LEVEL: 100 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43285	0.3	38.2	613.8
43293	0.0	38.4	597.6
43311	0.5	37.3	499.2
43320	0.8	39.0	476.4
43340	0.4	39.2	389.8
MEAN	0.5	38.4	515.4
S.D.	0.22	0.75	92.19
N	4	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43290	0.3	38.7	503.0
43307	0.3	36.5	565.7
43309	0.5	38.2	633.9
43318	0.4	38.7	586.6
43322	0.2	38.1	505.8
MEAN	0.3	38.0	559.0
S.D.	0.11	0.90	55.64
N	5	5	5

PROJECT NO.: WIL-186012

SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

SEX: MALES

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATAPLEXY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43277	0.3	39.0	521.2
43278	0.4	38.5	509.0
43280	2.6	37.5	597.5
43281	0.3	38.6	524.5
43282	0.5	38.0	418.6
MEAN	0.8	38.3	514.2
S.D.	1.00	0.58	63.76
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 12

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43398	0.3	38.7	259.3
43405	0.3	38.6	345.4
43409	0.4	39.1	288.1
43423	0.6	38.7	278.2
43432	0.4	38.7	315.8
MEAN	0.4	38.8	297.4
S.D.	0.12	0.19	33.72
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BRIP

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 1.00 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43400	0.6	38.9	336.9
43407	0.3	39.2	258.6
43413	0.4	38.6	305.1
43416	0.4	39.2	303.6
43419	0.1	39.0	244.4
MEAN	0.4	39.0	289.7
S.D.	0.18	0.25	37.67
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 3		SEX: FEMALES		BODY WEIGHT (grams)		
ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)				
43402	0.6	39.4		330.6		
43426	0.4	37.9		253.0		
43442	0.0	38.4		310.5		
43446	0.3	39.1		235.2		
43461	0.3	39.0		320.5		
MEAN	0.4	38.8		290.0		
S.D.	0.14	0.60		42.93		
N	4	5		5		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 89 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 12

SEX: FEMALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43401	0.5	37.9	378.5
43410	0.5	39.2	259.3
43421	0.4	39.4	341.9
43429	0.3	39.5	306.6
43430	0.5	39.5	300.3
MEAN	0.4	39.1	317.3
S.D.	0.09	0.68	45.05
N	5	5	5

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG/KG/DAY  
TEST PERIOD: WEEK 16

SEX: MALES

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43289	1.2	37.8	59.7
43295	3.8	38.2	59.8
43308	0.7	38.7	58.4
43316	0.6	39.0	53.8
43326	0.5	37.7	53.8
MEAN	1.4	38.3	571.7
S.D.	1.39	0.56	31.06
N	5	5	5

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43285	0.4	38.9	626.0
43293	0.7	38.3	601.9
43311	0.5	39.1	508.9
43320	0.7	38.1	500.7
43340	0.4	37.8	402.6
MEAN	0.5	38.4	528.0
S.D.	0.15	0.55	89.30
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43290	0.3	38.9	502.5
43307	0.6	39.0	570.4
43309	0.6	38.4	630.5
* 43318	0.4	38.0	596.0
43322	0.4	37.9	516.7
MEAN	0.5	38.4	563.2
S.D.	0.13	0.50	53.63
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4		SEX: MALES		BODY TEMPERATURE (degrees C)			BODY WEIGHT (grams)		
ANIMAL NUMBER	CATALEPSY (seconds)								
43277	0.7			37.9			526.9		
43278	0.4			38.2			509.4		
43280	1.4			38.4			628.9		
43281	0.5			38.7			540.5		
43282	0.5			37.9			426.1		
MEAN	0.7			38.2			526.4		
S.D.	0.41			0.34			72.55		
N	5			5			5		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 1  
DOSE LEVEL: 0 MG./KG./DAY  
TEST PERIOD: WEEK 16

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)		BODY WEIGHT (grams)
		0.8	0.0	
43398	0.8	38.6	262.2	
43405	0.4	39.1	347.3	
43409	0.5	37.5	285.7	
43423	0.4	38.5	290.7	
43432	0.3		323.1	
MEAN	0.5	38.4	301.8	
S.D.	0.19	0.67	33.45	
N	5	4	5	

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 2  
DOSE LEVEL: 100 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43400	0.6	37.2	332.8
43407	0.5	38.1	274.2
43413	0.8	37.8	303.9
43416	0.5	38.4	308.0
43419	0.8	38.2	262.0
MEAN	0.6	37.9	296.2
S.D.	0.15	0.47	28.25
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 3  
DOSE LEVEL: 300 MG/KG/DAY  
TEST PERIOD: WEEK 16

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43402	2.4	38.1	352.4
43426	0.5	38.3	263.1
43442	0.3	38.9	298.7
43446	0.5	38.7	247.6
43461	0.4	38.3	320.7
MEAN	0.8	38.5	296.5
S.D.	0.89	0.33	42.49
N	5	5	5

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

PHYSIOLOGICAL OBSERVATIONS

DOSE GROUP: 4

DOSE LEVEL: 1000 MG/KG/DAY

TEST PERIOD: WEEK 16

SEX: FEMALES

TABLE 90 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL FUNCTIONAL OBSERVATIONAL BATTERY DATA

ANIMAL NUMBER	CATALEPSY (seconds)	BODY TEMPERATURE (degrees C)	BODY WEIGHT (grams)
43401	0.5	38.0	358.2
43410	0.7	38.2	249.7
43421	0.5	37.9	320.6
43429	0.6	38.9	301.5
43430	1.0	38.5	302.0
MEAN	0.7	38.3	306.4
S.D.	0.21	0.41	39.19
N	5	5	5

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11/16/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 9.1 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43289	735	290	128	47	5	0	10	2	878	339
43295	744	289	429	132	221	57	0	0	1394	478
43308	532	202	25	0	5	2	0	0	562	204
43316	461	183	77	4	0	0	0	0	538	187
43326	593	215	473	155	12	2	270	49	1348	421
MEAN	613.	236.	226.	68.	49.	12.	56.	10.	944.	326.
S.D.	124.6	50.3	208.8	72.2	96.5	25.1	119.7	21.7	412.6	128.9
N	5									

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MOTOR ACTIVITY COUNTS

MALE GROUP: 100 MG/KG/DAY  
 TEST PERIOD: PRETEST

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43285	982	395	194	56	15	2	7	0	1198	453
43293	831	292	283	67	83	17	32	0	1229	376
43311	230	57	6	0	5	0	10	0	251	57
43320	272	69	116	20	3	0	1	0	392	89
43340	322	117	2	0	3	0	23	0	350	117
MEAN	527.	186.	120.	29.	22.	4.	15.	0.	684.	218.
S.D.	351.7	150.0	121.4	31.4	34.6	7.4	12.6	0.0	486.2	182.3
N	5									

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43290	146	30	385	120	21	0	166	38	718	188
43307	491	186	158	30	0	0	240	69	889	285
43309	452	139	153	4	52	1	6	0	663	144
43318	529	176	23	2	6	0	20	0	578	178
43322	284	80	254	57	31	1	0	0	569	138
MEAN	380.	122.	195.	43.	22.	0.	86.	21.	683.	187.
S.D.	161.0	66.2	134.4	48.7	20.7	0.5	109.8	31.3	130.5	59.0
N	5									

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43277	632	253	168	66	122	9	1	0	923	328
43278	525	166	270	78	0	0	0	0	795	244
43280	116	1	57	6	38	0	4	0	215	7
43281	370	122	21	4	7	0	0	0	398	126
43282	298	86	101	19	0	0	6	0	405	105
MEAN	388.	126.	123.	35.	33.	2.	2.	0.	547.	162.
S.D.	200.4	93.5	98.6	34.9	52.0	4.0	2.7	0.0	298.1	125.3
N	5									

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43398	641	275	329	129	255	88	109	54	1334	546
43405	535	201	506	211	224	65	76	2	1341	479
43409	776	296	193	60	13	0	0	0	982	356
43423	354	120	175	73	0	0	0	0	529	193
43432	519	161	96	8	0	0	3	0	618	169
MEAN	565.	211.	260.	96.	98.	31.	38.	11.	961.	349.
S.D.	156.4	74.5	161.2	77.3	129.4	42.7	51.5	23.9	383.5	167.7
N	5									

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

FEMALE GROUP: 100 MG/KG/DAY  
TEST PERIOD: PRETEST

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43400	639	249	256	96	5	1	0	0	900	346
43407	717	275	555	6	484	139	46	0	1302	420
43413	90	22	8	0	0	0	10	0	108	22
43416	463	158	290	75	17	0	270	96	1040	329
43419	645	275	264	83	0	0	0	0	909	358
MEAN	511.	196.	175.	52.	101.	28.	65.	19.	852.	295.
S.D.	253.1	108.4	132.3	45.4	214.1	62.1	116.0	42.9	446.4	156.4
N	5									

TABLE 91 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43402	698	287	168	52	86	0	78	6	1030	345
43426	605	221	51	5	59	13	17	0	732	239
43442	445	136	0	0	159	70	164	51	768	257
43446	783	328	260	99	22	0	34	0	1099	427
43461	777	257	147	28	15	0	412	150	1351	435
MEAN	662.	246.	125.	37.	68.	17.	141.	41.	996.	341.
S.D.	141.0	72.9	102.1	40.4	58.3	30.4	161.8	64.4	254.7	91.8
N	5									

TABLE 91 (WEEK - 1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43401	773	243	22	0	396	155	23	0	1214	398
43410	799	342	380	148	64	25	128	62	1371	577
43421	576	204	39	2	1	0	26	0	642	206
43429	550	210	313	104	23	0	90	39	976	353
43430	405	150	57	13	1	0	6	0	469	163
MEAN	621.	230.	162.	53.	97.	36.	55.	20.	934.	339.
S.D.	164.7	71.0	170.4	68.3	169.1	67.4	52.0	28.8	378.4	165.1
N	5									

PMASDMv4.14  
11/20/2000  
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PROJECT NO.: WIL-186612  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS			16 TO 30 MINS			31 TO 45 MINS			46 TO 60 MINS			COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43289	731	236	176	30	0	0	84	25	991	291				
43295	607	108	234	19	31	4	104	24	976	155				
43308	397	118	33	3	0	0	4.9	6	479	127				
43316	265	41	353	53	277	47	2	0	897	141				
43326	313	55	175	26	190	18	150	25	828	124				
MEAN	463.	112.	194.	26.	100.	14.	78.	16.	834.	168.				
S.D.	199.1	77.0	115.6	18.2	126.7	20.0	55.9	12.1	209.1	70.1				
N	5													

PROJECT NO. WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS			16 TO 30 MINS			31 TO 45 MINS			46 TO 60 MINS			COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43285	639	107	243	28	232	38	0	0	1114	173	1633	346		
43293	797	212	384	40	207	43	245	51	1633	346	817	155		
43311	392	71	300	58	113	23	12	3	693	84	693	84		
43320	219	22	145	8	83	13	246	41	429	63	429	63		
43340	151	38	58	0	173	25	47	0						
MEAN	440.	90.	226.	27.	162.	28.	110.	19.	937.	164.	460.4	111.7		
S.D.	274.6	75.6	128.0	23.6	62.6	12.1	124.9	24.9						
N	5													

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

MALE GROUP: 300 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43290	267	41	326	60	117	15	216	43	926	159
43307	842	224	244	77	280	76	69	20	1435	397
43309	684	188	216	33	45	9	17	0	962	230
43318	441	126	91	12	18	2	244	36	794	176
43322	486	124	173	34	483	143	9	2	1151	303
MEAN	544	141	210	43	189	49	111	20	1054	253
S.D.	223.1	70.0	86.9	25.4	193.6	60.3	111.5	19.4	248.5	98.1
N	5									

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

MALE GROUP: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43277	930	234	204	34	227	39	0	0	1361	307
43278	840	174	146	28	74	15	1	0	1061	217
43280	349	57	305	59	221	54	197	40	1072	210
43281	538	100	356	106	216	48	80	27	1190	281
43282	670	89	188	28	278	46	0	0	1136	163
MEAN	665.	131.	240.	51.	203.	40.	56.	13.	1164.	236.
S.D.	232.8	71.9	87.3	33.3	76.4	15.2	86.2	18.9	121.8	57.9
N	5									

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43398	352	162	136	53	150	57	138	70	776	342
43405	331	107	324	84	136	50	274	111	1065	352
43409	538	125	74	21	323	109	265	61	1200	316
43423	88	32	226	67	151	31	0	0	465	130
43432	280	75	15	6	142	49	18	4	455	134
MEAN	318.	100.	155.	46.	180.	59.	139.	49.	792.	255.
S.D.	161.3	49.4	122.6	32.2	80.0	29.4	130.4	47.0	339.8	112.9
N	5									

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

FEMALE GROUP: 100 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43400	595	201	112	21	260	82	441	149	1408	453
43407	377	103	209	24	74	12	355	73	1015	212
43413	47	6	19	0	0	0	41	0	107	6
43416	234	64	9	0	33	4	11	0	287	68
43419	383	131	155	71	146	66	0	0	684	268
MEAN	327.	101.	101.	23.	103.	33.	170.	44.	700.	201.
S.D.	202.8	73.0	86.4	29.0	103.5	38.3	211.2	66.5	529.8	175.9
N	5									

FEMALE GROUP: 300 MG/KG/DAY  
 TEST PERIOD: WEEK 12

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43402	650	279	225	79	349	106	207	66	1431	530
43426	511	170	59	15	151	40	298	106	1019	331
43442	256	40	401	43	98	18	126	30	881	131
43446	550	235	241	109	103	17	104	44	998	405
43461	515	174	15	0	31	5	131	27	692	206
MEAN	496.	180.	188.	49.	146.	37.	173.	55.	1004.	321.
S.D.	145.6	90.2	155.0	45.0	121.0	40.5	79.9	32.6	271.6	158.2
N	5									

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 92 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

FEMALE GROUP: 1000 MG/KG/DAY  
TEST PERIOD: WEEK 12

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43401	64.9	23.6	36.3	9.1	19.7	1.6	31.2	10.3	152.1	44.6
43410	38.8	15.8	11.4	3.6	23.0	4.5	7.6	1.2	80.8	25.1
43421	65.8	18.4	12.5	2.5	25.6	6.6	8.8	1.8	112.7	29.3
43429	80.0	27.4	16.6	6.8	37.1	11.5	9.1	2.1	142.8	47.8
43430	43.2	15.2	7.9	2.6	6.1	6	2.27	0.45	79.9	22.9
MEAN	585.	201.	169.	49.	223.	50.	159.	40.	1137.	339.
S.D.	171.7	52.7	112.6	29.1	111.8	43.6	105.6	37.5	337.2	114.8
N	5									

PMASUMv4.14  
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PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43289	621	162	181	35	0	0	110	25	912	222
43295	300	55	17	2	198	28	19	4	534	89
43308	451	122	14	0	3	0	7	0	475	122
43316	298	55	328	63	84	19	15	0	725	137
43326	423	94	486	77	97	18	100	12	1106	201
MEAN	41.9	9.8	20.5	3.5	7.6	1.3	5.0	.8	750.	154.
S.D.	132.9	45.8	204.0	34.9	81.4	12.5	50.3	10.6	262.6	55.6
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43285	680	135	156	26	183	32	47	9	1066	202
43293	683	159	374	86	46	18	45	9	1148	272
43311	360	66	89	12	13	0	95	9	557	87
43320	409	82	234	33	51	7	47	4	741	126
43340	205	36	225	39	68	8	139	29	637	112
MEAN	467.	96.	216.	39.	72.	13.	75.	12.	830.	160.
S.D.	209.5	50.5	106.2	28.0	65.1	12.4	41.7	9.7	262.9	76.0
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43290	342	72	63	9	131	20	16	1	552	102
43307	431	74	32	2	110	3	6	0	579	79
43309	448	112	83	8	29	7	44	10	604	137
43318	372	77	16	3	57	19	5	1	450	100
43322	388	66	150	27	54	2	5	2	597	97
MEAN	396.	80.	69.	10.	76.	10.	15.	3.	556.	103.
S.D.	43.3	18.2	52.4	10.1	42.5	8.7	16.8	4.1	62.8	21.1
N	5									

PROJECT NO :WIL-186012  
SPONSOR :CMA - BFRIP

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43277	626	197	106	22	2	0	7	0	741	219
43278	567	114	25	6	30	5	6	0	628	125
43280	489	83	102	11	128	11	24	1	743	106
43281	346	96	355	63	49	13	240	64	990	236
43282	635	144	116	18	18	0	21	4	790	166
MEAN	533.	127.	141.	24.	45.	6.	60.	14.	778.	170.
S.D.	119.5	45.4	125.1	22.7	49.3	6.1	101.2	28.1	132.5	56.8
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43398	369	151	374	158	85	38	224	93	1052	440
43405	347	113	485	194	418	160	407	152	1657	619
43409	585	199	132	22	163	58	3	0	883	279
43423	515	157	186	67	4	0	218	68	923	292
43432	299	82	145	34	57	17	12	2	513	135
MEAN	423.	140.	264.	95.	145.	55.	173.	63.	1006.	353.
S.D.	121.2	44.7	157.0	76.8	162.8	62.8	169.0	64.3	415.6	183.7
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43400	497	214	62	25	212	60	580	218	1351	517
43407	618	203	183	43	119	26	303	80	1223	352
43413	59	10	7	1	9	1	11	0	86	12
43416	303	75	93	30	2	0	221	10	619	115
43419	683	303	227	88	156	70	0	0	1066	461
MEAN	432.	161.	114.	37.	100.	31.	223.	62.	869.	291.
S.D.	253.8	117.2	89.6	32.1	92.1	32.6	239.0	93.6	517.7	219.4
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MOTOR ACTIVITY COUNTS

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43402	625	222	431	120	250	74	97	35	1403	451
43426	349	116	1	0	75	27	33	4	458	147
43442	530	173	46	20	326	80	70	27	972	300
43446	611	228	497	179	267	115	153	54	1528	576
43461	392	122	43	11	6	0	432	92	873	225
MEAN	501.	172.	204.	66.	185.	59.	157.	42.	1047.	340.
S.D.	125.8	53.1	239.5	79.3	136.9	45.6	159.8	33.0	430.4	173.3
N	5									

TABLE 93 (WEEK 16 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MOTOR ACTIVITY COUNTS

FEMALE GROUP: 1000 MG/KG/DAY  
 TEST PERIOD: WEEK 16

ANIMAL	0 TO 15 MINS		16 TO 30 MINS		31 TO 45 MINS		46 TO 60 MINS		COMBINED	
	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB	TOTAL	AMB
43401	519	187	47	2	192	55	77	19	835	263
43410	810	299	305	106	365	130	150	29	1630	564
43421	677	184	106	29	221	43	354	106	1358	362
43429	536	213	415	168	40	20	396	122	1387	523
43430	349	110	113	29	146	46	2	0	610	185
MEAN	578.	199.	197.	67.	193.	59.	196.	55.	1164.	379.
S.D.	174.1	68.0	155.7	68.6	118.3	41.8	172.4	55.0	424.2	163.0
N	5									

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 11/17/2000  
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**FINAL REPORT**

Volume 3 of 4  
(Individual Tables 94-121)

**STUDY TITLE**

**A 90-DAY ORAL (Gavage) TOXICITY  
STUDY OF HBCD IN RATS**

**STUDY DIRECTOR**

Christopher P. Chengelis, Ph.D., D.A.B.T.

**STUDY INITIATED ON**

March 2, 2000

**STUDY COMPLETION DATE**

December 14, 2001

**PERFORMING LABORATORY**

WIL Research Laboratories, Inc.  
1407 George Road  
Ashland, Ohio 44805-9281

**LABORATORY STUDY NUMBER**

WIL-186012

**SPONSOR**

Chemical Manufacturers Association  
Brominated Flame Retardant Industry Panel (BFRIP)  
1300 Wilson Blvd.  
Arlington, VA 22209

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE	RED	HEMO-	HEMATO-	PLATELET			
	CELL	CELLS	GLOBIN	CRIT				
	thous./uL	mil./uL	g/dL	%	fL	ug	g/dL	thous./uL
GROUP : 0 MG/KG/DAY	MALES							
43365	14.6	6.95	13.8	39.8	57.2	19.8	34.6	79.9.
43368	20.7	7.53	14.7	42.3	56.2	19.6	34.8	83.3.
43369	21.2	7.00	14.3	40.6	58.0	20.4	35.1	1023.
43379	14.7	7.13	14.4	41.5	58.3	20.2	34.7	1236.
43391	12.3	7.21	13.9	40.1	55.6	19.2	34.6	973.
MEAN	16.7	7.16	14.2	40.9	57.1	19.8	34.8	973.
S.D.	4.00	0.229	0.37	1.03	1.15	0.48	0.21	174.3
N	5	5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil./uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ug = PICROGRAMS,  
ug/uL = MILLIONS /MICROLITER,  
ug/uL = THOUSANDS /MICROLITER,

750 of 1527

PROJECT NO.: WIL 186012  
SPONSOR: CMA-BFRP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE	RED	HEMO-	HEMATO-	PLATELET			
	CELLS	CELLS	GLOBIN	CRIT				
	thous./uL	mill./uL	g/dL	%	fL	uug	g/dL	thous./uL
GROUP: 300 MG/KG/DAY		MALES						
43363	7.3	7.47	15.2	43.9	58.8	20.3	34.5	1086.
43383	12.9	7.40	14.8	41.9	56.7	20.1	35.4	894.
43385	16.0	7.21	14.8	42.6	59.0	20.5	34.8	1115.
43388	13.7	7.61	14.9	43.0	56.5	19.6	34.7	958.
43392	15.1	7.06	14.7	41.9	59.3	20.8	35.0	942.
MEAN	13.0	7.35	14.9	42.7	58.1	20.3	34.9	999.
S.D.	3.41	0.217	0.19	0.84	1.35	0.45	0.34	96.2
N	5	5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill./uL = MILLIONS/MICROLITER, uug = MILLIONS/MICROLITER, uug = PICOGRAMS,

fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELLS thous./uL	RED CELLS mill./uL	HEMO- GLOBIN g/dL	HEMATO- CRIT			MCV	MCH	MCHC	PLATELET uug g/dL thous./uL
				%	fL	uug				
<b>GROUP: 1000 MG/KG/DAY</b>										
MALES										
43362	17.1	7.35	14.2	41.4	56.2	19.3	34.4	1198.		
43372	16.1	6.59	14.1	40.1	60.8	21.4	35.1	1015.		
43373	10.1	7.60	14.5	42.3	55.6	19.1	34.3	1108.		
43377	15.7	7.40	14.8	43.2	58.3	20.0	34.4	1026.		
43397	11.0	7.21	14.5	42.3	58.7	20.1	34.2	884.		
MEAN	14.0	7.23	14.4	41.9	57.9	20.0	34.5	1046.		
S.D.	3.21	0.384	0.28	1.17	2.08	0.90	0.36	116.8		
N	5	5	5	5	5	5	5	5		

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill./uL = MILLIONS/MICROLITER, uug = PICOGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELLS	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT		MCV	MCH	MCHC	PLATELET	
				thous./uL	mil./uL	g/dL	%	fL	ug	g/dL	thous./uL
GROUP: 0 MG/KG/DAY		FEMALES								
43467	10.7	7.01	13.6		40.4	57.6	19.4	33.7	1117.	
43474	9.3	7.24	14.0		40.0	55.3	19.4	35.0	1223.	
43483	8.9	6.83	13.3		39.6	58.0	19.5	33.7	1100.	
43497	12.3	6.80	14.2		40.8	60.0	21.0	34.9	1524.	
43501	8.3	6.53	13.3		38.8	59.5	20.4	34.3	1099.	
MEAN	9.9	6.88	13.7		39.9	58.1	19.9	34.3	1213.	
S.D.	1.61	0.264	0.41		0.77	1.85	0.73	0.63	181.5	
N	5	5	5		5	5	5	5	5	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil./uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELLS thous/uL	RED CELLS mil/uL	HEMO-GLOBIN g/dL	HEMATO-CRIT			PLATELET	
				%	fL	MCH	MCHC	
GROUP: 100 MG/KG/DAY	FEMALES							
43486	6.9	6.80	14.3	40.8	60.1	21.0	35.0	1110.
43489	9.5	7.15	14.2	41.8	58.5	19.8	33.8	1056.
43502	14.1	7.29	14.7	43.2	59.3	20.2	34.0	1054.
43511	11.2	7.06	14.3	41.9	59.3	20.3	34.2	1009.
43515	7.2	6.17	12.0	34.8	56.5	19.5	34.6	672.
MEAN	9.8	6.89	13.9	40.5	58.7	20.2	34.3	980.
S.D.	2.99	0.442	1.08	3.30	1.37	0.57	0.48	176.0
N	5	5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, uug = PICOGRAMS,  
fL = FEMTOLITERS

uug = PICOGRAMS,

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO- GLOBIN	HEMATO-		MCHC	PLATELET				
				thous./uL	mil/uL	g/dL	%	fL	ug	9/dL	thous./uL
GROUP: 300 MG/KG/DAY	FEMALES										
43496	15.8	6.70	13.5			39.9		59.5		20.1	
43508	12.5	7.35	14.6			42.4		57.8		19.9	
43513	14.9	6.91	14.0			41.7		60.4		20.2	
43516	6.6	7.25	14.5			43.1		59.4		20.0	
43517	16.2	6.82	13.9			40.9		59.9		20.4	
MEAN	13.2	7.01	14.1			41.6		59.4		20.1	
S.D.	3.96	0.281	0.45			1.25		0.98		0.19	
N	5	5	5			5		5		5	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 94 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT			MCH	MCHC	PLATELET			
				thous./uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL	
43479	9.5	6.82	14.1			41.9		61.5		20.7	33.7	962.
43481	13.5	6.85	14.3			41.3		60.3		20.8	34.6	1227.
43484	11.4	7.12	13.7			40.1		56.3		19.2	34.1	1291.
43492	11.9	7.20	14.5			42.9		59.5		20.1	33.7	1056.
43503	11.1	7.66	15.1			44.8		58.4		19.7	33.8	1070.
MEAN	11.5	7.13	14.3			42.2		59.2		20.1	34.0	1121.
S.D.	1.44	0.339	0.52			1.77		1.98		0.67	0.38	134.4
N	5	5	5			5		5		5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS      uug = PICOGRAMS,

PHEMV4.0  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT	MCV	MCH	MCHC	PLATELET		PROTIME	APTT
								fL	ug/dL	thous./uL	seconds
<b>GROUP: 0 MG/KG/DAY MALES</b>											
43332	13.5	8.20	15.6	44.0	53.7	19.0	35.5	1379.	13.9	21.8	
43334	12.5	7.83	14.6	41.3	52.7	18.7	35.4	1246.	14.0	19.9	
43336	11.2	9.02	15.3	45.2	50.1	17.0	33.9	1317.	13.5	19.7	
43339	22.2	8.59	15.6	43.8	51.0	18.2	35.7	1293.	13.8	22.0	
43349	11.1	7.65	13.8	39.0	51.0	18.1	35.4	1067.	13.0	20.7	
43365	11.3	7.19	13.2	36.8	51.2	18.4	36.0	1032.	13.6	22.4	
43368	15.8	7.83	13.8	38.8	49.5	17.6	35.5	1968.	13.9	20.1	
43369	17.1	7.67	14.4	40.6	52.9	18.8	35.5	1125.	13.2	17.5	
43379	11.1	7.98	14.8	41.5	52.0	18.5	35.6	1318.	13.2	15.6	
43391	15.9	8.10	14.7	41.6	51.4	18.1	35.3	1238.	13.1	19.1	
MEAN	14.2	8.01	14.6	41.3	51.6	18.2	35.4	1298.	13.5	19.9	
S.D.	3.62	0.515	0.80	2.61	1.29	0.59	0.56	261.7	0.37	2.10	
N	10	10	10	10	10	10	10	10	10	10	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HCED IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

$\text{g/dL}$  = GRAMS/DECILITER,  $\text{thous/mL}$  = THOUSANDS/MICROLITER,  $\text{mil/L}$  = MILLIONS/MICROLITER.  $\text{mmHg}$  = DIASTOGRAMS

fL = FEMTOLITERS

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT		MCV	MCH	MCHC	PLATELET	PROTIME	APTT			
				thous./uL	mil/uL	g/dL	%	fL	ug	9/gdL	thous./uL			
<b>GROUP: 300 MG/KG/DAY</b>														
<b>MALES</b>														
43323	13.7	7.74	15.2	42.2	54.6	19.7	36.0	1994.	19.3	25.1				
43331	15.1	9.37	15.5	46.0	49.1	16.5	33.6	1220.	14.8	22.2				
43341	10.3	7.92	15.3	43.0	54.3	19.3	35.6	1426.	17.8	27.0				
43355	14.8	8.54	16.0	44.5	52.1	18.8	36.0	1517.	13.6	20.6				
43361	12.7	8.25	14.7	41.6	50.4	17.9	35.4	1341.	18.1	29.5				
43363	6.3	8.03	15.2	43.6	54.3	19.0	34.9	996.	14.2	21.2				
43383	10.9	7.66	14.1	40.1	52.4	18.4	35.2	953.	15.1	30.3				
43385	9.5	6.93	13.1	36.2	52.3	18.9	36.2	1101.	13.6	23.0				
43388	10.4	8.08	14.5	41.3	51.1	18.0	35.2	1336.	16.5	27.8				
43392	10.2	8.17	15.5	43.6	53.3	19.0	35.5	1384.	14.2	18.7				
MEAN	11.4	8.07	14.9	42.2	52.4	18.6	35.4	1327.	15.7					
S.D.	2.70	0.628	0.84	2.71	1.81	0.91	0.74	299.3	2.06	24.5				
N	10	10	10	10	10	10	10	10	10	3.99				

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

ug = PICOGRAMS,

thous./uL

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT	MCV	MCH	MCHC	PLATELET		PROTIME	APTT
								fL	ug	9/dL	thous./uL
<b>GROUP: 1000 MG/KG/DAY MALES</b>											
43297	11.6	8.34	15.1	43.2	51.7	18.1	35.0	1288.	15.7	28.5	
43325	13.2	7.79	14.4	41.1	52.8	18.6	35.1	878.	15.9	23.8	
43328	11.0	8.26	15.5	44.8	54.2	18.7	34.5	1159.	13.9	21.6	
43346	14.7	7.67	14.1	39.2	51.1	18.4	36.1	1019.	14.9	23.1	
43362	17.0	7.12	13.1	36.6	51.3	18.4	35.9	842.	15.1	30.3	
43372	13.6	7.44	14.9	42.5	57.2	20.1	35.1	1128.	13.1	9.3	
43373	7.0	8.61	15.1	43.1	50.1	17.5	35.0	1050.	17.6	25.8	
43377	15.3	6.99	13.7	38.5	55.1	19.5	35.5	1046.	15.7	27.4	
43397	10.9	7.26	13.8	39.7	54.7	19.1	34.9	905.	17.1	26.1	
MEAN	12.7	7.72	14.4	41.0	53.1	18.7	35.2	1035.	15.4	24.0	
S.D.	2.96	0.576	0.80	2.66	2.31	0.77	0.51	144.7	1.42	6.14	
N	9	9	9	9	9	9	9	9	9	9	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER,  
fL = FEMTOLITERS ug = PICOGRAMS,

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT	MCV	MCH	MCHC	PLATELET	PROTIME	APTT	GROUP: 0 MG/KG/DAY									
											thous./uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL	seconds	seconds	FEMALES
43433	5.1	7.07	14.1	39.4	55.7	19.9	35.8	1170.	13.4	16.3										
43435	12.7	7.15	14.2	39.8	55.7	19.9	35.8	1098.	13.5	16.9										
43436	10.9	7.39	14.9	41.0	55.5	20.2	36.3	1245.	13.5	18.6										
43438	9.8	7.80	15.4	43.5	55.8	19.8	35.5	1059.	12.7	10.4										
43449	7.8	5.87	11.9	32.6	55.6	20.2	36.4	1132.	13.5	17.1										
43467	9.7	7.28	14.0	39.1	53.6	19.2	35.8	1522.	12.6	15.3										
43474	7.6	7.60	14.3	39.9	52.5	18.8	35.8	1354.	13.2	16.1										
43483	3.6	5.87	11.2	31.4	53.4	19.1	35.7	992.	13.4	18.8										
43497	5.8	7.15	14.2	39.4	55.1	19.9	36.1	2194.	14.3	17.0										
43501	5.4	6.93	13.6	37.5	54.1	19.6	36.2	1189.	13.1	17.2										
MEAN	8.2	7.01	13.8	38.4	54.7	19.7	35.9	1296.	13.3	16.4										
S.D.	2.87	0.653	1.29	3.70	1.20	0.48	0.29	350.5	0.48	2.35										
N	10	10	10	10	1.0	1.0	1.0	10	10	10										

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL GROUP: 100 MG/KG/DAY	WHITE CELL	RED CELLS	HEMO- GLOBIN	HEMATO- CRIT	MCV	MCH	MCHC	PLATELET	PROTIME	APTT
	thous./uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL	seconds	seconds
	FEMALES									
43420	6.7	7.38	14.3	39.7	53.8	19.4	36.1	1437.	12.0	9.1
43439	11.6	7.30	13.5	37.8	51.8	18.5	35.7	1140.	12.7	19.9
43458	7.3	6.86	13.5	37.6	54.8	19.7	36.0	2204.	13.1	22.2
43462	10.2	8.32	15.1	43.2	51.9	18.2	35.0	1190.	11.8	12.6
43468	9.3	6.69	13.0	36.5	54.5	19.4	35.6	103.	13.0	19.9
43486	6.7	6.06	12.1	33.0	54.4	20.0	36.7	1097.	13.0	19.2
43489	6.9	6.50	11.9	34.5	53.1	18.4	34.6	1036.	12.7	23.4
43502	11.8	7.28	14.1	39.1	53.7	19.4	36.1	1211.	12.7	17.1
43511	7.1	7.58	14.8	40.8	53.8	19.5	36.3	1067.	12.5	16.2
43515	10.3	7.42	13.7	39.1	52.8	18.4	34.9	1509.	12.2	17.5
MEAN	8.8	7.14	13.6	38.1	53.5	19.1	35.7	1199.	12.6	
S.D.	2.08	0.635	1.05	2.98	1.04	0.65	0.68	518.8	0.44	4.31
N	10	10	10	10	10	10	10	10	10	10

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO- GLOBIN	HEMATO- CRIT	MCV	MCH	MCHC	PLATELET			APTT	
								g/dL	%	fL	ug	
GROUP : 300 MG/KG/DAY		FEMALES										
43463	12.9	7.40	14.6	41.4	56.0	19.7	35.1				1077.	12.4
43475	10.1	7.70	13.9	40.1	52.1	18.0	34.6				1067.	12.0
43478	9.4	6.34	12.4	34.6	54.6	19.6	35.9				865.	9.6
43491	8.1	7.46	14.4	40.5	54.3	19.3	35.5				1276.	12.7
43495	8.4	7.03	13.7	38.7	55.0	19.4	35.3				1166.	12.2
43496	11.5	4.26	9.7	26.0	60.9	22.8	37.5				1430.	16.5
43508	9.9	6.50	12.3	34.1	52.4	19.0	36.2				1039.	19.2
43513	8.9	6.40	12.8	35.0	54.8	20.1	36.6				1173.	18.0
43516	7.2	6.72	13.4	37.3	55.5	19.9	35.9				12.6	22.5
43517	9.4	6.62	12.2	35.3	53.3	18.4	34.5				1314.	17.6
MEAN	9.6	6.64	12.9	36.3	54.9	19.6	35.7				1153.	20.9
S.D.	1.66	0.964	1.43	4.49	2.47	1.29	0.92				159.2	15.9
N	10	10	10	10	10	10	10				10	10

g/dL = GRAMS/DECILITER, thous/uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER,  
fL = FEMTOLITERS

ug = PICOGRAMS,

wug = PICOGRAMS,

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 95 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO- GLOBIN	HEMATO-		MCHC	PLATELET	PROTIME	APTT			
				thous./uL	mil./uL	g/dL	%	fL	ug	g/dL	thous./uL	seconds	seconds
<b>GROUP: 1,000 MG/KG/DAY FEMALE</b>												
434440	6.3	7.61	13.8	39.7	52.2	18.2	34.8	119.	12.8	21.9		
434456	7.9	6.49	13.5	37.4	57.6	20.7	36.0	191.9.	12.1	17.4		
434460	6.4	6.67	12.8	35.5	53.3	19.1	35.9	1046.	12.6	20.2		
434466	8.7	6.71	12.8	35.8	53.4	19.1	35.7	1065.	11.7	7.6		
434477	17.4	6.86	13.3	37.8	55.1	19.4	35.2	1245.	13.9	19.1		
434479	5.1	6.13	11.6	33.2	54.2	18.9	34.9	957.	13.5	12.0		
434481	9.1	7.30	14.0	40.1	54.9	19.2	34.9	1239.	13.3	12.9		
434484	7.8	7.63	14.0	39.8	52.1	18.3	35.1	1245.	14.2	14.4		
434492	11.3	7.77	14.4	40.5	52.1	18.6	35.7	1071.	12.4	19.0		
435003	9.9	7.98	15.3	42.7	53.5	19.2	35.9	1810.	12.9	15.8		
MEAN	9.0	7.12	13.6	38.3	53.8	19.1	35.4	1172.	12.9	16.0		
S.D.	3.47	0.624	1.01	2.84	1.71	0.70	0.47	491.3	0.79	4.37		
N	10	10	10	10	10	10	10	10	10	10		

9/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil./uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

ug = PICOGRAMS,

PHEMV4.0  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT	MCV	MCH	MCHC	PLATELET		PROTIME	APTT						
								thous./uL	mil/uL	g/dL	%	fL	ug	9/dL	thous./uL	seconds	seconds
<b>GROUP: 0 MG/KG/DAY</b>																	
43289	12.1	9.10	15.1	41.3	45.4	16.6	36.6	1367.	15.6	17.7							
43295	15.1	7.94	14.6	40.5	51.1	18.4	36.0	1294.	14.3	18.8							
43308	17.5	8.36	15.3	40.6	48.6	18.3	37.7	1465.	15.2	18.9							
43316	11.8	8.05	15.5	43.1	53.5	19.3	36.0	1272.	13.3	18.3							
43326	17.9	9.42	16.8	45.7	48.5	17.9	36.8	1366.	12.7	19.0							
MEAN	14.9	8.57	15.5	42.2	49.4	18.1	36.6	1353.	14.2	18.5							
S.D.	2.88	0.655	0.82	2.20	3.05	0.98	0.70	75.7	1.23	0.54							
N	5	5	5	5	5	5	5	5	5	5							

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

ug = PICOGRAMS,

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN g/dL	HEMATO-CRIT %	MCV fL	MCH ug	MCHC g/dL	PLATELET PROTIME APTT	
								thous./uL	seconds
<b>GROUP: 100 MG/KG/DAY MALES</b>									
43285	10.2	8.83	15.1	41.7	47.2	17.1	36.2	1465.	13.1
43293	11.2	8.84	16.2	43.8	49.5	18.3	37.0	1575.	14.4
43311	18.4	8.09	14.2	39.2	48.5	17.6	36.2	1395.	22.2
43320	15.3	9.24	16.0	43.5	47.1	17.3	36.8	1642.	11.8
43340	14.8	8.67	15.7	42.8	49.3	18.1	36.7	1593.	19.2
MEAN	14.0	8.73	15.4	42.2	48.3	17.7	36.6	1534.	13.8
S.D.	3.32	0.417	0.81	1.86	1.13	0.51	0.36	101.1	18.5
N	5	5	5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

ug = PICOGRAMS,

PAGE 2  
WEEK 17

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT		MCV	MCH	MCHC	PLATELET	PROTIME	APTT
				thous./uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL
<b>GROUP: 300 MG/KG/DAY</b>											
			MALES								
43290	18.4	8.19	15.4		41.4	50.5	18.8	37.2	1342.	13.4	17.2
43307	13.4	8.57	15.2		43.2	50.4	17.8	35.2	1610.	12.0	18.0
43309	13.4	8.87	16.3		43.9	49.6	18.4	37.1	1509.	14.4	19.2
43318	16.4	9.12	16.4		44.5	48.8	17.9	36.8	1282.	13.2	19.6
43322	11.2	7.95	15.1		41.4	52.1	19.0	36.5	1451.	13.3	17.3
MEAN	14.6	8.54	15.7		42.9	50.3	18.4	36.6	1439.	13.3	18.3
S.D.	2.83	0.479	0.62		1.43	1.23	0.53	0.81	130.7	0.85	1.09
N	5	5	5		5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,

fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BERIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO- GLOBIN	HEMATO- CRIT		MCV	MCH	MCHC	PLATELET	PROTIME	APTT
				thous./uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL
GROUP: 1000 MG/KG/DAY										seconds	seconds
43277	10.5	8.74	16.0	43.5	49.8	18.3	36.7	1361.	12.8	20.4	
43278	14.4	9.65	16.5	45.0	46.6	17.1	36.6	1441.	14.9	21.7	
43280	10.5	8.05	15.6	42.3	52.5	19.4	37.0	1358.	14.1	18.9	
43281	16.9	8.86	16.1	43.2	48.7	18.2	37.3	1795.	13.8	20.2	
43282	12.7	8.70	16.4	44.7	51.3	18.8	36.7	1282.	14.2	20.6	
MEAN	13.0	8.80	16.1	43.7	49.8	18.4	36.9	1447.	14.0	20.4	
S.D.	2.73	0.571	0.36	1.11	2.29	0.85	0.29	202.3	0.76	1.00	
N	5	5	5	5	5	5	5	5	5	5	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT		MCV	MCH	MCHC	PLATELET	PROTIME	APTT
				thous./uL	mil./uL	g/dL	%	fL	ug	g/dL	thous./uL
GROUP: 0 MG/KG/DAY	FEMALES										
43398	10.2	7.84	14.8	39.9	50.8	18.9	37.2	1208.	11.8	15.3	
43405	5.4	7.54	15.1	40.7	54.0	20.0	37.0	1337.	13.2	14.8	
43409	5.4	7.41	14.2	38.5	51.9	19.2	37.0	1033.	11.2	15.7	
43423	10.6	7.32	14.6	39.1	53.3	20.0	37.4	1428.	12.4	14.6	
43432	9.5	7.93	15.1	41.5	52.3	19.0	36.3	1493.	12.7	16.5	
MEAN	8.2	7.61	14.8	39.9	52.5	19.4	37.0	1300.	12.3	15.4	
S.D.	2.60	0.267	0.38	1.20	1.24	0.54	0.41	183.5	0.78	0.76	
N	5	5	5	5	5	5	5	5	5	5	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil./uL = MILLIONS/MICROLITER, ug = MICROGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE CELL	RED CELLS	HEMO-GLOBIN	HEMATO-CRIT		MCV	MCH	MCHC	PLATELET	PROTIME	APTT
				thous./uL	mil/uL	g/dL	%	fL	uug	g/dL	thous./uL
GROUP: 100 MG/KG/DAY		FEMALES									
43400	8.4	8.31	15.9	43.3		52.1	19.1		36.7	1407.	12.2
43407	15.1	6.31	13.2	35.3		56.0	21.0		37.5	1457.	12.6
43413	8.3	7.46	14.4	39.3		52.7	19.3		36.6	1429.	13.1
43416	6.7	7.65	15.0	41.1		53.8	19.7		36.6	1490.	11.6
43419	12.5	8.30	15.2	41.7		50.3	18.3		36.5	1333.	11.7
MEAN	10.2	7.61	14.7	40.1		53.0	19.5		36.8	1423.	12.0
S.D.	3.48	0.819	1.01	3.06		2.11	0.99		0.41	59.2	1.80
N	5	5	5	5		5	5		5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER, uug = MILLIGRAMS,  
fL = FEMTOLITERS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	WHITE	RED	HEMO-	HEMATO-	MCV	MCH	MCHC	PLATELET	PROTIME	APTT
	CELL	CELLS	GLOBIN	CRT						
thous./uL	mil/uL	mil/uL	g/dL	%	fL	ug	g/dL	thous./uL	seconds	seconds
GROUP: 300 MG/KG/DAY	FEMALES									
43402	7.8	7.63	14.6	40.1	52.6	19.2	36.4	1101.	11.7	18.9
43426	7.2	7.98	14.9	40.7	51.0	18.6	36.5	1278.	11.7	15.5
43442	5.4	7.56	14.6	41.2	54.6	19.3	35.3	1504.	12.9	17.1
43446	9.1	7.51	14.5	39.7	52.9	19.3	36.5	1292.	12.8	18.1
43461	9.5	7.32	14.2	38.3	52.3	19.3	36.9	1373.	12.1	17.1
MEAN	7.8	7.60	14.6	40.0	52.7	19.1	36.3	1310.	12.2	17.3
S.D.	1.64	0.242	0.25	1.11	1.29	0.30	0.60	147.2	0.58	1.28
N	5	5	5	5	5	5	5	5	5	5

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mill/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FEMTOLITERS

ug = PICOGRAMS,

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 96 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL HEMATOLOGY VALUES

ANIMAL	CELL	RED CELLS	HEMO-GLOBIN g/dL	HEMATO-CRIT %	MCV fL	MCH ug	MCHC g/dL	PLATELET		PROTIME	APTT
								thous./uL	mil/uL		
								ug	thous./uL	seconds	seconds
GROUP: 1000 MG/KG/DAY	FEMALES										
43401	9.9	7.46	15.0	40.1	53.7	20.2	37.5	1367.	11.4	14.7	
43410	5.4	7.39	14.8	40.1	54.2	20.0	36.9	1415.	12.8	11.4	
43421	8.0	7.42	14.9	40.8	55.0	20.1	36.5	1316.	11.4	15.9	
43429	13.6	7.70	15.1	41.3	53.6	19.6	36.6	1206.	15.0	27.4	
43430	7.2	7.50	14.6	40.6	54.1	19.5	36.1	1426.	12.5	18.7	
MEAN	8.8	7.49	14.9	40.6	54.1	19.9	36.7	1346.	12.6	17.6	
S.D.	3.12	0.122	0.19	0.51	0.55	0.31	0.52	89.6	1.47	6.06	
N	5	5	5	5	5	5	5	5	5	5	

g/dL = GRAMS/DECILITER, thous./uL = THOUSANDS/MICROLITER, mil/uL = MILLIONS/MICROLITER, ug = PICOGRAMS,  
fL = FENTOLITERS

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11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP:	0 MG/KG/DAY	MALES	FEMALE				FEMALE			
			NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC ESTIMATE	PLATELET ESTIMATE	RBC MORPHOLOGY
43365	19	75	5	1	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43368	11	83	6	0	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43369	12	82	5	1	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43379	13	78	8	1	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43391	22	66	10	2	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	15	77	7	1	0	0	0			
S.D.	4.8	6.8	2.2	0.7	0.0	0	0			
N	5	5	5	5	5	5	5			

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	EOSIN- OPHIL	MONOCYTE	EOSIN- OPHIL BASOPHIL	RBC MORPHOLOGY	
						PLATELET ESTIMATE	PLATELET ESTIMATE
43371	11	82	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43380	19	72	8	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43382	7	85	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43384	30	60	10	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43386	13	77	9	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	16	75	8	1	0		
S.D.	8.9	9.8	1.6	0.4	0.0		
N	5	5	5	5	5		

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	EOSIN- OPHIL	MONOCYTE	BASOPHIL	MALES	
						PLATELET ESTIMATE	RBC MORPHOLOGY
GROUP : 300 MG / KG / DAY							
43363	18	74	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43383	10	82	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43385	9	84	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43388	16	76	8	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43392	9	81	9	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	12	79	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	4.3	4.2	1.1	0.4	0.0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
N	5	5	5	5	5	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH-	EOSIN- OPHIL	MONOCYTE	BASOPHIL	PLATELET	RBC
						ESTIMATE	MORPHOLOGY
GROUP : 1000 MG/KG/DAY MALES							
43362	12	83	5	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43372	9	83	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43373	16	76	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43377	13	80	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43397	9	81	9	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	12	81	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	2.9	2.9	1.5	0.4	0.0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
N	5	5	5	5	5	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	

PAGE 4  
WEEK 3

PROJECT NO.: WIL 186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET	RBC
						ESTIMATE	MORPHOLOGY
GROUP:	0 MG/KG/DAY	FEMALES					
43467	15	81	3	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43474	17	78	5	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43483	9	79	11	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43497	4	91	5	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43501	14	77	9	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	12	81	7	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	5.3	5.7	3.3	0.5	0.0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
N	5	5	5	5	5	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	

PAGE 5  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC	
						PLATELET ESTIMATE	MORPHOLOGY
<hr/>							
GROUP : 100 MG/KG/DAY		FEMALES					
43486	18	74	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43489	11	82	5	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43502	11	83	5	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43511	27	66	5	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43515	35	62	2	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED ADEQUATE 1-PKC 1-TGC 1-POL 1-CRE	
PLTS CLUMPED							
MEAN	20	73	5	1	0	<hr/>	
S.D.	10.5	9.4	1.8	0.5	0.0	<hr/>	
N	5	5	5	5	5	<hr/>	

1 = FEW, PKC = POIKILOCYTES, TGC = TARGET CELLS, POL = POLYCHROMASTA, CRE = CRENATED

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET ESTIMATE		RBC MORPHOLOGY
						PLATELET ESTIMATE	RBC MORPHOLOGY	
43496	10	80	8	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43508	7	88	4	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43513	12	81	7	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43516	13	80	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43517	8	85	7	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
MEAN	10	83	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
S.D.	2.5	3.6	1.5	0.8	0.0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
N	5	5	5	5	5	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 97 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP:	1000 MG/KG/DAY	FEMALES	NEUTRO-	Lymph-	Eosin-	PLATELET	RBC
			PHYL	OCTYL	OPHIL	MORPHOLOGY	MORPHOLOGY
43479	10	86	3	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43481	8	83	7	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43484	11	81	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43492	10	84	6	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43503	9	84	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	10	84	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	1.1	1.8	1.6	0.7	0.0		
N	5	5	5	5	5		

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11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	0 MG/KG/DAY		MALE	
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	EOSIN- OPHIL thous./uL
43365	14.6	2.8	11.0	0.7	0.1
43368	20.7	2.3	17.2	1.2	0.0
43369	21.2	2.5	17.4	1.1	0.0
43379	14.7	1.9	11.5	1.2	0.2
43391	12.3	2.7	8.1	1.2	0.1
MEAN	16.7	2.4	13.0	1.1	0.2
S.D.	4.00	0.35	4.10	0.21	0.0
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 1  
WEEK 3

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

100 MG/KG/DAY MALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43371	10.7	1.2		8.8	0.6
43380	13.9	2.6		10.0	1.1
43382	11.6	0.8		9.9	0.8
43384	13.0	3.9		7.8	1.3
43386	16.1	2.1		12.4	1.4
MEAN	13.1	2.1		9.8	1.1
S.D.	2.10	1.23		1.72	0.33
N	5	5		5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 2  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

		300 MG/KG/DAY MALE				
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE		EOSIN- OPHIL thous./uL
		thous./uL		thous./uL		
43363	7.3	1.3		5.4		0.1
43383	12.9	1.3		10.6		0.0
43385	16.0	1.4		13.4		0.0
43388	13.7	2.2		10.4		0.2
43392	15.1	1.4		12.2		0.0
MEAN	13.0	1.5		10.4		0.1
S.D.	3.41	0.38		3.07		0.07
N	5	5		5		5

thous./uL = THOUSANDS/MICROLITER

PAGE 3  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

1000 MG/KG/DAY MALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43362	17.1	2.1		14.2	0.9
43372	16.1	1.4		13.4	1.1
43373	10.1	1.6		7.7	0.7
43377	15.7	2.0		12.6	0.9
43397	11.0	1.0		8.9	1.0
MEAN	14.0	1.6		11.3	0.9
S.D.	3.21	0.44		2.87	0.16
N	5	5		5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 4  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	0 MG/KG/DAY		FEMALE		
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	EOSTIN- OPHIL thous./uL	BASOPHIL thous./uL
43467	10.7	1.6	8.7	0.3	0.1	0.0
43474	9.3	1.6	7.3	0.5	0.0	0.0
43483	8.9	0.8	7.0	1.0	0.1	0.0
43497	12.3	0.5	11.2	0.6	0.0	0.0
43501	8.3	1.2	6.4	0.7	0.0	0.0
MEAN	9.9	1.1	8.1	0.6	0.0	0.0
S.D.	1.61	0.49	1.91	0.25	0.05	0.00
N	5	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 5  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	100 MG/KG/DAY		FEMALE	
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	BOSIN- OPHIL thous./uL
43486	6.9	1.2	5.1	0.5	0.1
43489	9.5	1.0	7.8	0.5	0.2
43502	14.1	1.6	11.7	0.7	0.1
43511	11.2	3.0	7.4	0.6	0.2
43515	7.2	2.5	4.5	0.1	0.1
MEAN	9.8	1.9	7.3	0.5	0.1
S.D.	2.99	0.86	2.85	0.21	0.07
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 6  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

300 MG/KG/DAY FEMALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43496	15.8	1.6	12.6	1.3	0.3
43508	12.5	0.9	11.0	0.5	0.0
43513	14.9	1.8	12.1	1.0	0.1
43516	6.6	0.9	5.3	0.4	0.0
43517	16.2	1.3	13.8	1.1	0.1
MEAN	13.2	1.3	11.0	0.9	0.1
S.D.	3.96	0.42	3.32	0.39	0.13
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 7  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 98 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	1000 MG/KG/DAY FEMALE			EOSIN- OPHIL thous./uL
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	
43479	9.5	1.0	8.2	0.3	0.1
43481	13.5	1.1	11.2	0.9	0.0
43484	11.4	1.3	9.2	0.8	0.3
43492	11.9	1.2	10.0	0.7	0.1
43503	11.1	1.0	9.3	0.7	0.0
MEAN	11.5	1.1	9.6	0.7	0.1
S.D.	1.44	0.13	1.12	0.25	0.0
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

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11/17/2000  
R: 07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET		RBC ESTIMATE	MORPHOLOGY
						PLATELET ESTIMATE	RBC ESTIMATE		
<b>GROUP : 0 MG/KG/DAY</b>									
MALES									
43332	17	68	12	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43334	13	72	13	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43336	19	69	9	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43339	18	65	13	2	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43349	43	45	8	2	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43365	35	55	8	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43368	21	61	13	2	3	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43369	19	68	10	1	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43379	20	63	14	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43391	20	60	16	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
MEAN	23	63	12	2	2				
S.D.	9.2	8.0	2.7	0.6	0.7				
N	10	10	10	10	10				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET		RBC	MORPHOLOGY
						ESTIMATE	ESTIMATE	ESTIMATE	
GROUP : 100 MG/KG/DAY								MALES	
43342	14	70	13	2	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43350	24	55	18	1	2	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43351	32	54	11	2	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43354	15	72	11	1	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43364	13	73	11	1	2	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43371	19	66	13	1	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43380	23	64	10	2	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43382	31	56	11	2	0	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43384	42	41	14	2	1	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43386	13	78	8	1	0	PLATELET	ESTIMATE AND MORPHOLOGY NOT REVIEWED		
MEAN	23	63	12	2	1				
S.D.	9.8	11.3	2.7	0.5	0.7				
N	10	10	10	10	10				

PAGE 2  
WEEK 13

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC	
						PLATELET ESTIMATE	MORPHOLOGY
<b>GROUP: 300 MG/KG/DAY</b>							
						PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43323	14	75	9	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43331	13	74	11	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43341	17	67	13	1	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43355	14	75	10	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43361	14	75	9	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43363	21	62	15	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43383	38	49	11	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43385	24	64	10	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43388	22	62	13	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43392	14	72	11	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	19	68	11	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	7.7	8.5	1.9	0.5	0.6	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
N	10	10	10	10	10	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	

PAGE 3  
WEEK 13

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUCOCYTE DIFFERENTIAL COUNT (%)

GROUP:	1000 MG/KG/DAY	MALES			
		NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL BASOPHIL
43297	12	72	14	2	0
43325	27	58	14	1	0
43328	13	71	14	2	0
43346	31	58	8	1	2
43362	22	60	12	2	4
43372	15	68	14	2	1
43373	23	67	8	2	0
43377	25	68	5	2	0
43397	12	75	11	1	1
MEAN	20	66	11	2	1
S.D.	7.2	6.3	3.4	0.5	1.4
N	9	9	9	9	9

PAGE 4  
WEEK 13

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET ESTIMATE		RBC MORPHOLOGY	
						PLATELET ESTIMATE	RBC MORPHOLOGY	PLATELET ESTIMATE	RBC MORPHOLOGY
43433	21	70	6	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43435	16	72	10	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43436	13	76	9	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43438	9	83	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43449	19	63	15	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43467	13	80	4	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43474	14	73	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43483	35	53	10	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43497	7	84	7	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43501	12	71	12	3	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
MEAN	16	73	9	2	1				
S.D.	7.9	9.4	3.2	0.7	0.6				
N	10	10	10	10	10				

PAGE 5  
WEEK 13

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET ESTIMATE		RBC MORPHOLOGY	
						FEMALES	MACHINES	FEMALES	MACHINES
GROUP : 100 MG/KG/DAY									
43420	29	58	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43439	17	70	11	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43458	19	72	8	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43462	12	79	7	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43468	11	78	9	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43486	28	62	8	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43489	38	44	13	3	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43502	8	81	9	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43511	11	74	11	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
43515	16	74	7	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED			
MEAN	19	69	9	2	1				
S.D.	9.7	11.4	1.9	0.7	0.7				
N	10	10	10	10	10				

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC MORPHOLOGY	
						PLATELET ESTIMATE	RBC MORPHOLOGY
43463	11	81	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43475	30	63	7	0	0	ADEQUATE 1-PKC 1-POL 1-CRE	
43478	17	69	11	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43491	14	70	13	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43495	18	66	12	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43496	29	64	6	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43508	21	66	9	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43513	19	71	7	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43516	15	68	14	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43517	17	69	10	2	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	19	69	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	6.1	5.0	2.8	0.9	0.6	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
N	10	10	10	10	10	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	

1 = FEW, PKC = POIKILOCYTES, POL = POLYCHROMASIA, CRE = CRENATED

MORPHOLOGY CODE

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 99 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET ESTIMATE		RBC MORPHOLOGY
						FEMALE	MALE	
43440	23	60	12	3	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43456	9	78	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43460	25	58	15	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43466	24	63	11	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43477	41	45	12	0	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43479	22	66	9	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43481	12	74	10	2	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43484	25	58	14	1	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43492	16	76	7	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
43503	11	77	10	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED		
MEAN	21	66	11	2	1			
S.D.	9.4	10.8	2.4	0.8	0.8			
N	10	10	10	10	10			

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PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	0 MG/KG/DAY		MALE	
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	EOSIN- OPHIL thous./uL
43332	13.5	2.3	9.2	1.6	0.3
43334	12.5	1.6	9.0	1.6	0.1
43336	11.2	2.1	7.7	1.0	0.1
43339	22.2	4.0	14.4	2.9	0.4
43349	11.1	4.8	5.0	0.9	0.2
43365	11.3	4.0	6.2	0.9	0.1
43368	15.8	3.3	9.6	2.1	0.5
43369	17.1	3.2	11.6	1.7	0.2
43379	11.1	2.2	7.0	1.6	0.3
43391	15.9	3.2	9.5	2.5	0.1
MEAN	14.2	3.1	8.9	1.7	0.2
S.D.	3.62	1.00	2.72	0.67	0.12
N	10	10	10	10	10

thous./uL = THOUSANDS/MICROLITER

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	100 MG/KG/DAY MALE			EOSIN- OPHIL, thous./uL
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	
43342	15.2	2.1	10.6	2.0	0.3
43350	11.2	2.7	6.2	2.0	0.2
43351	10.4	3.3	5.6	1.1	0.1
43354	15.0	2.3	10.8	1.7	0.2
43364	14.3	1.9	10.4	1.6	0.2
43371	10.8	2.1	7.1	1.4	0.1
43380	12.8	2.9	8.2	1.3	0.3
43382	7.9	2.4	4.4	0.9	0.1
43384	15.6	6.6	6.4	2.2	0.2
43386	16.2	2.1	12.6	1.3	0.2
MEAN	12.9	2.8	8.2	1.5	0.2
S.D.	2.76	1.38	2.73	0.42	0.1
N	10	10	10	10	10

thous./uL = THOUSANDS/MICROLITER

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	300 MG/KG/DAY MALE		300 MG/KG/DAY MALE	
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	EOSIN- OPHIL thous./uL
43323	13.7	1.9	10.3	1.2	0.1
43331	15.1	2.0	11.2	1.7	0.2
43341	10.3	1.8	6.9	1.3	0.1
43355	14.8	2.1	11.1	1.5	0.1
43361	12.7	1.8	9.5	1.1	0.1
43363	6.3	1.3	3.9	0.9	0.1
43383	10.9	4.1	5.3	1.2	0.1
43385	9.5	2.3	6.1	1.0	0.1
43388	10.4	2.3	6.4	1.4	0.2
43392	10.2	1.4	7.3	1.1	0.2
MEAN	11.4	2.1	7.8	1.2	0.1
S.D.	2.70	0.79	2.55	0.22	0.04
N	10	10	10	10	10

thous./uL = THOUSANDS/MICROLITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

1000 MG/KG/DAY MALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43297	11.6	1.4	8.4	1.6	0.2
43325	13.2	3.6	7.7	1.8	0.1
43328	11.0	1.4	7.8	1.5	0.2
43346	14.7	4.6	8.5	1.2	0.1
43362	17.0	3.7	10.2	2.0	0.3
43372	13.6	2.0	9.2	1.9	0.7
43373	7.0	1.6	4.7	0.6	0.1
43377	15.3	3.8	10.4	0.8	0.0
43397	10.9	1.3	8.2	1.2	0.1
MEAN	12.7	2.6	8.3	1.4	0.2
S.D.	2.96	1.29	1.68	0.52	0.08
N	9	9	9	9	9

thous./uL = THOUSANDS/MICROLITER

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	0 MG/KG/DAY		FEMALE	
		NEUTRO- PHIL thous./uL	LYMPH- OCYTE thous./uL	MONOCYTE thous./uL	EOSIN- OPHIL thous./uL
43433	5.1	1.1	3.6	0.3	0.1
43435	12.7	2.0	9.1	1.3	0.1
43436	10.9	1.4	8.3	1.0	0.1
43438	9.8	0.9	8.1	0.7	0.0
43449	7.8	1.5	4.9	1.2	0.1
43467	9.7	1.3	7.8	0.4	0.1
43474	7.6	1.1	5.5	0.8	0.1
43483	3.6	1.3	1.9	0.4	0.1
43497	9.8	0.7	8.2	0.7	0.0
43501	5.4	0.6	3.8	0.6	0.0
MEAN	8.2	1.2	6.1	0.7	0.1
S.D.	2.87	0.41	2.50	0.33	0.05
N	10	10	10	10	10

thous./uL = THOUSANDS/MICROLITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./ul.	100 MG/KG/DAY		100 MG/KG/DAY FEMALE	
		NEUTRO- PHIL thous./ul.	LYMPH- OCYTE thous./ul.	MONOCYTE thous./ul.	EOSIN- OPHIL thous./ul.
43420	6.7	1.9	3.9	0.7	0.1
43439	11.6	2.0	8.1	1.3	0.1
43458	7.3	1.4	5.3	0.6	0.1
43462	10.2	1.2	8.1	0.7	0.1
43468	9.3	1.0	7.3	0.8	0.2
43486	6.7	1.9	4.2	0.5	0.0
43489	6.9	2.6	3.0	0.9	0.2
43502	11.8	0.9	9.6	1.1	0.2
43511	7.1	0.8	5.3	0.8	0.2
43515	10.3	1.6	7.6	0.7	0.2
MEAN	8.8	1.5	6.2	0.8	0.2
S.D.	2.08	0.57	2.18	0.22	0.1
N	10	10	10	10	10

thous./ul. = THOUSANDS/MICROLITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

	300 MG/KG/DAY FEMALE	
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTROPHIL thous./uL
43463	12.9	1.4
43475	10.1	3.0
43478	9.4	1.6
43491	8.1	1.1
43495	8.4	1.5
43496	11.5	3.3
43508	9.9	2.1
43513	8.9	1.7
43516	7.2	1.1
43517	9.4	1.6
MEAN	9.6	1.8
S.D.	1.66	0.76
N	10	10

	LYMPHOCYTE thous./uL	MONOCYTE thous./uL	EOSTR-OPHIL thous./uL
	10.4	0.9	0.1
	6.4	0.7	0.0
	6.5	1.0	0.1
	5.7	1.1	0.2
	5.5	1.0	0.3
	7.4	0.7	0.1
	6.5	0.9	0.3
	6.3	0.6	0.2
	4.9	1.0	0.1
	6.5	0.9	0.2
	6.6	0.9	0.2
	1.51	0.16	0.08
	1.0	10	10

thous./uL = THOUSANDS/MICROLITER

PAGE 7  
WEEK 13

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 100 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

1000 MG/KG/DAY FEMALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43440	6.3	1.4	3.8	0.8	0.2
43456	7.9	0.7	6.2	0.8	0.1
43460	6.4	1.6	3.7	1.0	0.1
43466	8.7	2.1	5.5	1.0	0.2
43477	17.4	7.1	7.8	2.1	0.0
43479	5.1	1.1	3.4	0.5	0.3
43481	9.1	1.1	6.7	0.9	0.1
43484	7.8	2.0	4.5	1.1	0.2
43492	11.3	1.8	8.6	0.8	0.2
43503	9.9	1.1	7.6	1.0	0.0
MEAN	9.0	2.0	5.8	1.0	0.1
S.D.	3.47	1.85	1.89	0.43	0.06
N	10	10	10	10	10

thous./uL = THOUSANDS/MICROLITER

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11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC	
						PLATELET ESTIMATE	PLATELET ESTIMATE
43289	11	75	11	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43295	20	66	11	3	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43308	11	76	9	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43316	9	75	13	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43326	11	71	14	2	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	12	73	12	2	1		
S.D.	4.3	4.2	1.9	0.5	0.7		
N	5	5	5	5	5		

PAGE 1  
WEEK 17

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC MORPHOLOGY	
						PLATELET ESTIMATE	PLATELET MORPHOLOGY
MALES							
43285	12	76	10	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43293	15	68	12	4	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43311	10	76	11	1	2	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43320	11	72	14	3	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43340	11	76	11	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	12	74	12	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	1.9	3.6	1.5	1.3	0.8		
N	5	5	5	5	5		

PAGE 2  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC MORPHOLOGY	
						PLATELET ESTIMATE	PLATELET ESTIMATE
43290	10	80	9	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43307	11	83	4	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43309	14	73	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43318	28	53	16	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43322	14	71	12	3	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	15	72	10	2	0		
S.D.	7.3	11.7	4.4	0.7	0.5		
N	5	5	5	5	5		

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP:	1000 MG/KG/DAY	MALES				PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
		NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	BOSIN- OPHIL BASOPHIL	
43277	19	70	8	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43278	13	71	12	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43280	19	62	16	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43281	7	83	7	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43282	7	82	8	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	13	74	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
S.D.	6.0	8.8	3.8	0.4	0.0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
N	5	5	5	5	5	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED

PAGE 4  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	RBC	
						PLATELET ESTIMATE	MORPHOLOGY
43398	10	79	8	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43405	12	78	6	4	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43409	13	76	8	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43423	8	82	8	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43432	25	64	9	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	14	76	8	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	6.7	6.9	1.1	0.9	0.5		
N	5	5	5	5	5		

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP : 100 MG/KG/DAY	ANIMAL	NEUTRO- PHIL	LYMPH- OCYTE	MONOCYTE	EOSIN- OPHIL	BASOPHIL	PLATELET ESTIMATE	RBC ESTIMATE	MORPHOLOGY
							RBC MORPHOLOGY		
	43400	10	79	8	2	1	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
	43407	27	59	12	1	1	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
	43413	8	78	11	2	1	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
	43416	8	78	11	3	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
	43419	5	89	4	2	0	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN		12	77	9	2	1			PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
S.D.		8.8	10.9	3.3	0.7	0.5			
N		5	5	5	5	5			

PAGE 6  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP :	300 MG/KG/DAY	FEMALES	NEUTRO-	LYMPH-	EOSIN-	PLATELET	RBC
			PHIL	OCTY	MONOCYTE	OPHTL	MORPHOLOGY
43402	20	64	14	2	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43426	13	77	8	2	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43442	25	59	11	4	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43446	12	82	4	2	0	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
43461	17	71	9	2	1	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
MEAN	17	71	9	2	2	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED
S.D.	5.3	9.3	3.7	0.9	0.5	0.5	
N	5	5	5	5	5	5	

PAGE 7  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 101 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE DIFFERENTIAL COUNT (%)

GROUP:	1000 MG/KG/DAY	FEMALES	NEUTRO-	LYMPH-	EOSIN-	PLATELET	RBC
			PHIL.	OCYTE	MONOCYTE	OPHIL.	BASOPHIL.	MORPHOLOGY
43401	7	80	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43410	13	74	9	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43421	14	73	10	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43429	11	83	5	1	0	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
43430	14	71	11	3	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
MEAN	12	76	9	2	1	PLATELET ESTIMATE AND MORPHOLOGY NOT REVIEWED	
S.D.	2.9	5.1	2.3	0.8	0.4		
N	5	5	5	5	5		

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R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

	0 MG/KG/DAY		MALE	
	NEUTROPHIL	LYMPHOCTYE	MONOCYTE	EOSINOPHIL
ANIMAL	thous./uL	thous./uL	thous./uL	thous./uL
43289	12.1	1.3	9.1	0.2
43295	15.1	3.0	10.0	0.5
43308	17.5	1.9	13.3	0.5
43316	11.8	1.1	8.9	0.2
43326	17.9	2.0	12.7	0.4
MEAN	14.9	1.9	10.8	0.4
S.D.	2.88	0.75	2.08	0.13
N	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 1  
WEEK 17

PROJECT NO.: WIL-186612  
SPONSOR: CMA-BFRIP

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

		100 MG/KG/DAY MALE			
		NEUTRO-	LYMPH-	MONOCYTE	EOSIN-
ANIMAL	TOTAL LEUKOCYTES thous./uL	PHIL. thous./uL	OCTYE thous./uL	thous./uL	OPHIL. thous./uL
43285	10.2	1.2	7.8	1.0	0.2
43293	11.2	1.7	7.6	1.3	0.4
43311	18.4	1.8	14.0	2.0	0.2
43320	15.3	1.7	11.0	2.1	0.5
43340	14.8	1.6	11.2	1.6	0.1
MEAN	14.0	1.6	10.3	1.6	0.3
S.D.	3.32	0.23	2.68	0.47	0.15
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

300 MG/KG/DAY MALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTROPHIL		EOSINOPHIL	
		thous./uL	thous./uL	thous./uL	thous./uL
43290	18.4	1.8	14.7	1.7	0.2
43307	13.4	1.5	11.1	0.5	0.0
43309	13.4	1.9	9.8	1.3	0.3
43318	16.4	4.6	8.7	2.6	0.3
43322	11.2	1.6	8.0	1.3	0.3
MEAN	14.6	2.3	10.5	1.5	0.3
S.D.	2.83	1.31	2.67	0.75	0.06
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 3  
WEEK 17

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

		1000 MG/KG/DAY MALE			
		NEUTRO-	LYMPH-	EOSIN-	
		PHIL.	OXYTE	OPHIL.	BASOPHIL
ANIMAL	LEUKOCYTES thous./uL	thous./uL	thous./uL	thous./uL	thous./uL
43277	10.5	2.0	7.4	0.8	0.2
43278	14.4	1.9	10.2	1.7	0.4
43280	10.5	2.0	6.5	1.7	0.2
43281	16.9	1.2	14.0	1.2	0.3
43282	12.7	0.9	10.4	1.0	0.3
MEAN	13.0	1.6	9.7	1.3	0.3
S.D.	2.73	0.52	2.97	0.40	0.10
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	0 MG/KG/DAY		FEMALE	
		NEUTRO- PHIL thous./uL	LYM- PHO- CYTE thous./uL	MONOCYTE thous./uL	EOSIN- OPHIL thous./uL
43398	10.2	1.0	8.1	0.8	0.2
43405	5.4	0.6	4.2	0.3	0.0
43409	5.4	0.7	4.1	0.4	0.1
43423	10.6	0.8	8.7	0.8	0.2
43432	9.5	2.4	6.1	0.9	0.0
MEAN	8.2	1.1	6.2	0.7	0.0
S.D.	2.60	0.72	2.12	0.26	0.05
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PAGE 5  
WEEK 17

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	100 MG/KG/DAY			FEMALE
		NEUTRO- PHIL thous./uL	LIMPH- OCYTE thous./uL	MONOCYTE thous./uL	
43400	8.4	0.8	6.6	0.7	0.2
43407	15.1	4.1	8.9	1.8	0.2
43413	8.3	0.7	6.5	0.9	0.2
43416	6.7	0.5	5.2	0.7	0.2
43419	12.5	0.6	11.1	0.5	0.3
MEAN	10.2	1.3	7.7	0.9	0.2
S.D.	3.48	1.53	2.34	0.52	0.06
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL LEUKOCYTE COUNTS

ANIMAL	TOTAL LEUKOCYTES thous./uL	300 MG/KG/DAY FEMALE		
		NEUTRO- PHIL thous./uL	LIMPH- OCYTE thous./uL	MONOCYTE thous./uL
43402	7.8	1.6	5.0	1.1
43426	7.2	0.9	5.5	0.6
43442	5.4	1.4	3.2	0.6
43446	9.1	1.1	7.5	0.4
43461	9.5	1.6	6.7	0.9
MEAN	7.8	1.3	5.6	0.7
S.D.	1.64	0.29	1.66	0.28
N	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

TABLE 102 (WEEK 17 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL LEUKOCYTE COUNTS

1000 MG/KG/DAY FEMALE					
ANIMAL	TOTAL LEUKOCYTES thous./uL	NEUTRO- PHIL		LYMPH- OCYTE	
		thous./uL	thous./uL	thous./uL	thous./uL
43401	9.9	0.7	7.9	1.0	0.2
43410	5.4	0.7	4.0	0.5	0.2
43421	8.0	1.1	5.8	0.8	0.2
43429	13.6	1.5	11.3	0.7	0.1
43430	7.2	1.0	5.1	0.8	0.2
MEAN	8.8	1.0	6.8	0.7	0.2
S.D.	3.12	0.33	2.87	0.18	0.04
N	5	5	5	5	5

thous./uL = THOUSANDS/MICROLITER

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	TOTAL PROTEIN g/dL	TOTAL GLOBULIN g/dL	A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREATININE mg/dL	ALKALINE PHOS TSE mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
GROUP: 0 MG/KG/DAY	MALES								
43365	4.2	6.2	2.0	2.10	0.2	15.5	0.4	216.	40.
43368	4.2	6.3	2.1	2.00	0.2	12.1	0.2	189.	33.
43369	4.3	6.8	2.5	1.72	0.2	15.5	0.2	214.	27.
43379	4.3	6.7	2.4	1.79	0.2	10.5	0.2	211.	26.
43391	4.1	6.1	2.0	2.05	0.1	11.2	0.2	181.	73.
MEAN	4.2	6.4	2.2	1.93	0.2	13.0	0.2	202.	31.
S.D.	0.08	0.31	0.23	0.167	0.04	2.39	0.09	16.1	5.6
N	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 1  
3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mg/dL	PHOS- PHORUS mEq/L	SODIUM POTAS- SIUM mEq/L	
						mEq/L	mEq/L
GROUP : 0 MG/KG/DAY	MALES						
43365	157.	45.	9.1	98.	9.1	4.76	142.
43368	118.	59.	10.1	96.	8.6	5.67	141.
43369	129.	40.	10.3	99.	9.1	5.53	141.
43379	125.	39.	9.7	102.	8.7	5.83	142.
43391	122.	48.	9.5	100.	9.1	5.16	141.
MEAN	130.	46.	9.7	99.	8.9	5.39	141.
S.D.	15.5	8.0	0.48	2.2	0.25	0.431	0.5
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,      mEq/L = milliequivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP: 100 MG./KG./DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS TSE mg/dL	ASPARTATE TRANSFER mg/dL	ALANINE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
43371	4.6	6.5	1.9	2.42	0.1	9.6	0.2	246.	24.	96.	0.
43380	4.3	6.4	2.1	2.05	0.1	12.4	0.2	151.	25.	79.	0.
43382	4.2	6.3	2.1	2.00	0.1	12.1	0.2	218.	21.	77.	1.
43384	4.6	6.6	2.0	2.30	0.1	12.2	0.2	142.	21.	65.	1.
43386	4.5	6.8	2.3	1.96	0.1	14.1	0.2	169.	32.	99.	0.
MEAN	4.4	6.5	2.1	2.15	0.1	12.1	0.2	185.	25.	83.	0.
S.D.	0.18	0.19	0.15	0.202	0.00	1.61	0.00	44.9	4.5	14.1	0.5
N	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 3  
WEEK 3

**A** 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
TABLE 103 (WEEK 3 EVALUATION)  
INDIVIDUAL SERUM CHEMISTRY VALUES

$\text{mg/dL} = \text{MILLIGRAMS/DECILITER}$ ,       $\text{mEq/L} = \text{milliequivalents/LITER}$

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOSPHATASE TSE mg/dL	ASPARTATE TRANSFER TRANSFER U/L	GLUTAMYL TRANSFER TRANSFER U/L
43363	4.2	6.6	2.4	1.75	0.1	10.4	0.2	244.	28.	67.
43383	4.5	6.1	1.6	2.81	0.1	13.2	0.2	258.	25.	92.
43385	4.4	6.4	2.0	2.20	0.1	12.6	0.2	188.	30.	94.
43388	4.5	7.1	2.6	1.73	0.1	10.2	0.1	150.	24.	65.
43392	4.4	6.2	1.8	2.44	0.1	10.6	0.2	180.	31.	108.
MEAN	4.4	6.5	2.1	2.19	0.1	11.4	0.2	204.	28.	85.
S.D.	0.12	0.40	0.41	0.462	0.00	1.39	0.04	45.5	3.0	18.6
N	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 5  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORTIDE	PHOS-PHORUS	POTAS-SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mg/dL	mEq/L
<b>GROUP: 300 MG/KG/DAY</b>							
	<b>MALES</b>						
43363	132.	91.	9.9	104.	8.6	5.74	141.
43383	86.	32.	9.8	102.	9.1	5.36	142.
43385	90.	49.	9.8	100.	9.1	5.61	142.
43388	98.	41.	10.0	100.	9.0	5.31	143.
43392	96.	41.	9.5	102.	8.5	5.51	141.
MEAN	100.	51.	9.8	102.	8.9	5.51	142.
S.D.	18.3	23.3	0.19	1.7	0.29	0.177	0.8
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliequivalents/Liter

PAGE  
6  
WEEK  
3

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS- TASE U/L	ASPARTATE TRANSFER ENZYME U/L	GLUTAMYL TRANSFER ENZYME U/L
43362	4.5	6.8	2.3	1.96	0.1	15.7	0.4	175.	33.	79.
43372	4.7	6.8	2.1	2.24	0.1	14.3	0.2	168.	23.	74.
43373	4.5	6.5	2.0	2.25	0.1	12.3	0.2	199.	29.	80.
43377	4.5	6.7	2.2	2.05	0.1	10.8	0.1	139.	24.	71.
43397	4.5	6.6	2.1	2.14	0.1	8.7	0.1	179.	21.	65.
MEAN	4.5	6.7	2.1	2.13	0.1	12.4	0.2	172.	26.	74.
S.D.	0.09	0.13	0.11	0.124	0.00	2.77	0.12	21.7	4.9	6.1
N	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER,  
 g/dL = GRAMS/DECILITER,  
 mg/dL = MILLIGRAMS/DECILITER

PAGE 7  
 WEEK 3

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP: 1000 MG/KG/DAY	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
43362	113.	46.	10.2	110.	9.5	7.15	141.
43372	112.	56.	10.4	108.	9.4	5.82	142.
43373	125.	55.	10.0	109.	9.1	5.60	140.
43377	106.	38.	10.2	111.	9.0	5.17	144.
43397	116.	51.	10.0	111.	8.8	5.49	143.
MEAN	114.	49.	10.2	110.	9.2	5.85	142.
S.D.	6.9	7.4	0.17	1.3	0.29	0.766	1.6
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliequivalents/Liter

PAGE 8  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL NUMBER	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOSPHATE TSE mg/dL	ASPARTATE TRANSFER TRANSFER U/L	GLUTAMYL TRANSFER TRANSFER U/L
43467	5.2	7.3	2.1	2.48	0.1	16.0	0.2	72.	26.	91.
43474	4.8	6.5	1.7	2.82	0.2	12.4	0.3	127.	29.	124.
43483	4.8	7.0	2.2	2.18	0.2	15.6	0.3	136.	25.	115.
43497	4.6	6.3	1.7	2.71	0.2	16.8	0.2	128.	30.	113.
43501	4.8	6.3	1.5	3.20	0.2	15.6	0.2	125.	21.	100.
MEAN	4.8	6.7	1.8	2.68	0.2	15.3	0.2	118.	26.	109.
S.D.	0.22	0.45	0.30	0.381	0.04	1.68	0.05	25.8	3.6	13.0
N	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 9  
WEEK 3

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

$\text{mg/dL} = \text{MILLIGRAMS/DECILITER}$ ,       $\text{mEq/L} = \text{milliequivalents/Liter}$

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL g/dL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS/TSE TRANSFER U/L	ASPARTATE TRANSFER U/L	GLUTAMYL TRANSFER U/L
43486	5.5	7.4	1.9	2.89	0.1	15.9	0.3	84.	23.	69.
43489	5.2	7.5	2.3	2.26	0.1	16.1	0.3	104.	25.	74.
43502	4.9	7.1	2.2	2.23	0.1	12.3	0.3	124.	27.	81.
43511	4.9	6.9	2.0	2.45	0.1	14.7	0.3	114.	25.	83.
43515	4.8	7.2	2.4	2.00	0.1	15.3	0.3	99.	27.	64.
MEAN	5.1	7.2	2.2	2.37	0.1	14.9	0.3	105.	25.	74.
S.D.	0.29	0.24	0.21	0.334	0.00	1.53	0.00	15.2	1.7	8.0
N	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 11  
WEEK 3

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
43486	126.	51.	10.4	104.	7.3	4.83	142.
43489	122.	65.	10.3	102.	6.7	4.50	140.
43502	114.	52.	10.1	103.	7.6	4.39	142.
43511	136.	89.	9.8	102.	6.8	5.10	139.
43515	129.	60.	10.1	101.	7.6	5.23	139.
MEAN	125.	63.	10.1	102.	7.2	4.81	140.
S.D.	8.2	15.4	0.23	1.1	0.43	0.365	1.5
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliequivalents/Liter

PAGE 12  
WEEK 3

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS/TSE mg/dL	ALANINE TRANSFERASE U/L	ASPARTATE TRANSFERASE U/L	GLUTAMYL TRANSFERASE U/L
43496	5.2	7.2	2.0	2.60	0.3	11.1	0.2	70.	26.	116.	0.
43508	4.5	6.8	2.3	1.96	0.1	12.4	0.3	125.	35.	86.	0.
43513	4.4	6.8	2.4	1.83	0.1	13.7	0.2	110.	28.	121.	0.
43516	5.2	7.1	1.9	2.74	0.1	12.0	0.3	119.	21.	96.	0.
43517	4.8	6.7	1.9	2.53	0.1	16.1	0.2	110.	27.	101.	0.
MEAN	4.8	6.9	2.1	2.33	0.1	13.1	0.2	107.	27.	104.	0.
S.D.	0.38	0.22	0.23	0.409	0.09	1.94	0.05	21.5	5.0	14.4	0.0
N	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mg/dL	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
GROUP : 300 MG/KG/DAY	FEMALES						
43496	106.	86.	10.0	102.	7.9	6.65	139.
43508	108.	47.	9.7	103.	7.3	5.27	141.
43513	99.	56.	9.6	104.	7.4	5.53	142.
43516	109.	68.	9.8	104.	7.3	5.00	141.
43517	95.	53.	9.7	102.	7.9	5.74	138.
MEAN	103.	62.	9.8	103.	7.6	5.64	140.
S.D.	6.1	15.4	0.15	1.0	0.31	0.630	1.6
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILLITER,      mEq/L = milliequivalents/liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

GROUP : 1000 MG/KG/DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOSPHATE mg/dL	ALANINE TRANSFERASE U/L	ASPARTATE TRANSFERASE U/L	GLUTAMYL TRANSFERASE U/L
43479	5.1	7.4	2.3	2.22	0.1	11.4	0.2	90.	25.	71.	3.
43481	4.5	6.7	2.2	2.05	0.1	11.9	0.2	108.	31.	88.	1.
43484	6.2	8.6	2.4	2.58	0.1	13.7	0.2	88.	23.	54.	1.
43492	5.0	6.9	1.9	2.63	0.1	10.6	0.2	130.	26.	76.	2.
43503	5.2	7.2	2.0	2.60	0.1	12.7	0.3	80.	23.	71.	2.
MEAN	5.2	7.4	2.2	2.42	0.1	12.1	0.2	99.	26.	72.	2.
S.D.	0.62	0.74	0.21	0.264	0.00	1.19	0.04	20.0	3.3	12.2	0.8
N	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

PAGE 15  
WEEK 3

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRP

TABLE 103 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GROUP : 1000 MG/KG/DAY	FEMALES	CHOL-	CALCIUM	CHLORIDE	PHOS-	POTAS-	SODIUM
			ESTEROL	mg / dL	mg / dL	mg / L	mEq / L	mg / dL
43479		130.	82.	10.0	115.	6.9	5.10	142.
43481		116.	51.	10.0	103.	9.1	6.53	138.
43484		121.	57.	11.2	106.	7.9	5.32	141.
43492		126.	82.	10.4	110.	8.5	5.20	142.
43503		112.	62.	10.0	109.	8.1	5.21	143.
MEAN	121.	67.	10.3	109.	8.1	5.47	141.	
S.D.	7.3	14.4	0.52	4.5	0.81	0.597	1.9	
N	5	5	5	5	5	5	5	

mg / dL = MILLIGRAMS/DECILITER,

mg / L = milliequivalents/Liter

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TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL UREA NITROGEN mg/dL	CREATININE mg/dL	ALKALINE PHOS-TSE mg/dL	ALANINE TRANSFER mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER u/L
<b>GROUP: 0 MG/KG/DAY MALES</b>									
43332	4.2	6.7	2.5	1.68	0.2	11.3	0.3	133.	74.
43334	4.6	6.9	2.3	2.00	0.2	12.1	0.2	118.	35.
43336	4.4	7.2	2.8	1.57	0.2	13.5	0.2	104.	40.
43339	4.4	7.2	2.8	1.57	0.2	12.2	0.2	105.	41.
43349	4.1	7.0	2.9	1.41	0.2	13.3	0.4	82.	105.
43355	4.2	6.3	2.1	2.00	0.1	12.1	0.4	100.	107.
43368	4.3	6.8	2.5	1.72	0.1	11.9	0.2	66.	29.
43369	4.4	7.3	2.9	1.52	0.2	15.8	0.2	95.	76.
43379	4.4	7.0	2.6	1.69	0.2	12.6	0.3	136.	32.
43391	4.3	7.1	2.8	1.54	0.1	11.6	0.2	95.	66.
MEAN	4.3	7.0	2.6	1.67	0.2	12.6	0.3	103.	73.
S.D.	0.14	0.30	0.27	0.197	0.05	1.31	0.08	21.5	32.
N	10	10	10	10	10	10	10	10	10

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP : 0 MG/KG/DAY	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
43332	116.	73.	9.6	96.	7.5	5.65	142.
43334	122.	65.	9.7	100.	6.5	5.34	143.
43336	131.	58.	10.0	102.	6.1	5.76	143.
43339	108.	52.	9.2	93.	7.7	6.12	141.
43349	120.	44.	9.1	101.	5.5	5.52	141.
43365	206.	52.	8.7	99.	5.5	4.34	141.
43368	124.	54.	9.6	98.	6.7	5.27	141.
43369	138.	54.	10.4	101.	6.5	5.17	144.
43379	131.	51.	10.1	104.	5.9	5.14	144.
43391	117.	59.	9.5	97.	7.0	5.73	142.
MEAN	131.	56.	9.6	99.	6.5	5.40	142.
S.D.	27.6	8.1	0.50	3.2	0.76	0.483	1.2
N	10	10	10	10	10	10	10

mg/dL = MILLIGRAMS/DECILITER,      mEq/L = milliequivalents/Liter

PAGE 2  
WEEK 13

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP : 100 MG/KG/DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILI g/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS TSE mg/dL	ASPARTATE TRANSFER mg/dL	ALANINE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
43342	4.5	7.0	2.5	1.80	0.2	11.8	0.2	96.	26.	66.	0.
43350	4.5	6.9	2.4	1.87	0.1	13.3	0.3	84.	28.	70.	0.
43351	4.6	7.2	2.6	1.77	0.2	12.5	0.3	108.	37.	77.	0.
43354	4.6	7.5	2.9	1.59	0.1	12.0	0.3	89.	25.	61.	1.
43364	4.6	7.5	2.9	1.59	0.3	12.8	0.3	68.	37.	119.	0.
43371	4.7	7.1	2.4	1.96	0.1	13.5	0.4	95.	28.	66.	0.
43380	4.7	7.5	2.8	1.68	0.1	12.9	0.3	87.	35.	72.	0.
43382	4.2	6.7	2.5	1.68	0.1	13.4	0.3	89.	29.	77.	1.
43384	4.6	7.4	2.8	1.64	0.2	14.3	0.3	80.	36.	68.	0.
43386	4.7	7.3	2.6	1.81	0.2	14.0	0.3	75.	27.	68.	0.
MEAN	4.6	7.2	2.6	1.74	0.2	13.1	0.3	87.	31.	74.	0.
S.D.	0.15	0.28	0.20	0.123	0.07	0.81	0.05	11.3	4.8	16.4	0.4
N	10	10	10	10	10	10	10	10	10	10	10

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORIDE	PHOS-PHORUS	POTAS-SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
GROUP: 100 MG/KG/DAY							
	MALES						
43342	125.	55.	9.7	100.	6.7	5.22	141.
43350	115.	40.	9.6	104.	6.5	5.64	142.
43351	127.	57.	9.4	104.	6.5	5.03	143.
43354	121.	49.	10.3	102.	6.8	5.25	141.
43364	114.	41.	10.1	105.	6.9	5.76	144.
43371	170.	59.	9.7	106.	5.9	4.44	141.
43380	103.	53.	10.4	107.	7.1	6.10	145.
43382	140.	40.	9.2	105.	5.8	4.15	142.
43384	162.	52.	10.2	108.	6.3	5.08	144.
43386	151.	51.	9.9	100.	6.8	5.22	141.
MEAN	133.	50.	9.9	104.	6.5	5.19	142.
S.D.	22.1	7.1	0.40	2.7	0.42	0.581	1.5
N	10	10	10	10	10	10	10

mg/dL = MILLIGRAMS/DECILITER, mEq/L = milliEquivalents/Liter

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP:	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS-TSE mg/dL	ALANINE TRANSFER PHOS-TSE mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
43323	4.7	7.1	2.4	1.96	0.1	12.6	0.4	102.	35.	73.	0.
43331	4.9	7.5	2.6	1.88	0.2	14.1	0.3	113.	38.	75.	0.
43341	4.6	7.0	2.4	1.92	0.2	12.3	0.3	92.	29.	64.	0.
43355	4.8	7.5	2.7	1.78	0.2	13.5	0.3	98.	49.	79.	0.
43361	5.1	7.7	2.6	1.96	0.1	11.7	0.3	70.	32.	52.	0.
43363	4.3	7.1	2.8	1.54	0.2	10.9	0.3	97.	69.	116.	2.
43383	4.6	6.4	1.8	2.56	0.2	14.1	0.3	133.	33.	78.	0.
43385	4.5	7.0	2.5	1.80	0.1	13.4	0.3	85.	45.	79.	1.
43388	4.8	7.6	2.8	1.71	0.1	13.8	0.3	68.	33.	63.	1.
43392	4.3	6.7	2.4	1.79	0.1	10.7	0.2	115.	33.	69.	0.
MEAN	4.7	7.2	2.5	1.89	0.2	12.7	0.3	97.	40.	75.	0.
S.D.	0.25	0.42	0.29	0.268	0.05	1.28	0.05	20.1	12.0	16.9	0.7
N	10	10	10	10	10	10	10	10	10	10	10

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
43323	130.	34.	9.5	105.	6.8	4.76	142.
43331	132.	65.	10.9	108.	7.4	5.61	146.
43341	154.	34.	9.7	109.	5.9	5.03	143.
43355	137.	56.	10.2	102.	6.9	5.19	142.
43361	142.	65.	10.2	104.	7.0	5.51	142.
43363	145.	71.	10.5	111.	5.7	5.32	146.
43383	117.	31.	9.2	107.	5.7	5.16	140.
43385	137.	47.	9.5	106.	4.9	4.59	142.
43388	136.	34.	9.6	106.	6.0	4.67	142.
43392	143.	47.	10.5	110.	6.5	4.98	144.
MEAN	137.	48.	10.0	107.	6.3	5.08	143.
S.D.	9.9	15.1	0.56	2.8	0.77	0.344	1.9
N	10	10	10	10	10	10	10

mg/dL = MILLIGRAMS/DECILITER, mEq/L = milliequivalents/Liter

PAGE 6  
WEEK 13

TABLE 104 - WEEK 13 EVALUATION  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP: 1000 MG./KG./DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS- TASE mg/dL	ASPARTATE TRANSFER- ASE U/L	GLUTAMYL TRANSFER- ASE U/L
43297	5.1	8.1	3.0	1.70	0.1	10.9	0.2	102.	31.	59.
43325	4.7	7.4	2.7	1.74	0.3	15.8	0.5	84.	34.	95.
43328	5.0	7.8	2.8	1.79	0.2	13.1	0.3	91.	37.	65.
43346	4.7	7.6	2.9	1.62	0.1	12.7	0.3	120.	30.	64.
43362	4.7	7.3	2.6	1.81	0.1	13.2	0.4	69.	29.	66.
43372	5.2	7.9	2.7	1.93	0.2	13.3	0.3	75.	39.	68.
43373	4.8	7.3	2.5	1.92	0.2	11.3	0.3	95.	44.	68.
43377	4.8	7.1	2.3	2.09	0.1	12.2	0.3	63.	27.	59.
43397	5.0	7.5	2.5	2.00	0.2	10.8	0.2	81.	26.	62.
MEAN	4.9	7.6	2.7	1.84	0.2	12.6	0.3	87.	33.	67.
S.D.	0.19	0.32	0.22	0.152	0.07	1.55	0.09	17.6	6.0	10.9
N	9	9	9	9	9	9	9	9	9	9

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP: 1000 MG/KG/DAY	GLUCOSE	CHOL- ESTEROL	CALCIUM	CHLORIDE	PHOS- PHORUS	POTAS- SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mg/dL
<b>MALES</b>							
43297	131.	58.	10.5	11.0.	7.2	5.32	143.
43325	145.	37.	9.3	11.7.	5.9	6.11	142.
43328	124.	32.	10.8	11.3.	6.7	5.60	145.
43346	121.	39.	10.0	11.3.	7.2	5.44	142.
43362	138.	48.	9.7	11.3.	6.9	5.30	141.
43372	117.	61.	10.7	11.6.	6.5	5.26	145.
43373	130.	56.	10.3	11.7.	5.3	4.99	144.
43377	154.	34.	9.7	11.5.	6.2	4.25	142.
43397	107.	57.	10.0	11.5.	7.0	5.25	144.
MEAN	130.	47.	10.1	11.4	6.5	5.28	143.
S.D.	14.5	11.5	0.50	2.3	0.64	0.496	1.5
N	9	9	9	9	9	9	9

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliequivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS-TSE mg/dL	ALANINE TRANSFER mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
GROUP:	0 MG/KG/DAY										
43433	5.0	7.2	2.2	2.27	0.2	18.6	0.4	49.	23.	72.	0.
43435	5.1	7.3	2.2	2.32	0.2	15.0	0.3	89.	37.	94.	0.
43436	4.9	6.9	2.0	2.45	0.2	12.5	0.3	54.	29.	74.	0.
43438	5.0	7.2	2.2	2.27	0.2	18.1	0.4	54.	30.	88.	0.
43449	4.4	6.6	2.2	2.00	0.1	18.0	0.3	60.	24.	97.	0.
43467	5.6	8.0	2.4	2.33	0.1	15.9	0.3	29.	28.	61.	0.
43474	5.2	7.1	1.9	2.74	0.2	14.4	0.3	49.	34.	113.	0.
43483	5.4	7.3	1.9	2.84	0.1	20.6	0.5	43.	23.	97.	0.
43497	4.8	7.0	2.2	2.18	0.2	16.1	0.3	66.	23.	70.	0.
43501	6.5	8.1	1.6	4.06	0.3	16.5	0.3	91.	28.	61.	0.
MEAN	5.2	7.3	2.1	2.55	0.2	16.6	0.3	58.	28.	83.	0.
S.D.	0.56	0.46	0.23	0.588	0.06	2.34	0.07	19.4	4.9	17.6	0.0
N	10	10	10	10	10	10	10	10	10	10	10

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

mg/dL = U/L

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP : 0 MG/KG/DAY	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L
43433	133.	59.	9.8	102.	5.1	4.68	142.
43435	119.	80.	9.7	97.	5.8	5.40	140.
43436	124.	71.	9.8	99.	6.5	5.63	141.
43438	140.	51.	9.8	103.	5.8	5.18	145.
43449	112.	50.	9.2	100.	7.2	4.96	142.
43467	138.	51.	10.4	104.	4.8	4.65	144.
43474	117.	48.	9.5	102.	4.3	5.01	143.
43483	137.	71.	9.6	101.	6.2	4.76	142.
43497	109.	46.	9.7	98.	5.5	5.67	141.
43501	142.	101.	10.4	100.	5.0	4.54	141.
MEAN	127.	63.	9.8	101.	5.6	5.05	142.
S.D.	12.4	17.8	0.37	2.2	0.87	0.410	1.5
N	10	10	10	10	10	1.0	1.0

mg/dL = MILLIGRAMS/DECILLITER,

mEq/L = milliEquivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP : 100 MG/KG/DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS-TSE TRANSFER mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
43420	5.4	8.2	2.8	1.93	0.2	21.3	0.4	51.	27.	78.
43439	5.9	8.2	2.3	2.57	0.1	11.4	0.3	37.	41.	117.
43458	4.7	6.8	2.1	2.24	0.2	14.7	0.5	42.	30.	87.
43462	5.0	6.9	1.9	2.63	0.2	13.5	0.3	50.	35.	88.
43468	6.0	8.4	2.4	2.50	0.2	15.8	0.4	30.	31.	95.
43486	5.8	8.0	2.2	2.64	0.1	17.2	0.3	24.	23.	49.
43489	5.8	7.7	1.9	3.05	0.8	17.6	0.4	22.	34.	129.
43502	6.0	8.3	2.3	2.61	0.2	15.7	0.3	51.	30.	61.
43511	5.5	7.5	2.0	2.75	0.1	12.9	0.3	41.	26.	96.
43515	5.9	8.6	2.7	2.19	0.1	16.1	0.4	35.	24.	58.
MEAN	5.6	7.9	2.3	2.51	0.2	15.6	0.4	38.	30.	86.
S.D.	0.45	0.62	0.31	0.317	0.21	2.78	0.07	10.7	5.5	25.5
N	10	10	10	10	10	10	10	10	10	10

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

PAGE 11  
WEEK 13

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GROUP: 100 MG/KG/DAY	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORTIDE	PHOS-PHORUS	POTAS-SIUM	SODIUM
		mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
		mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
<b>FEMALES</b>								
43420		119.	103.	10.5	105.	5.1	4.55	143.
43439		123.	69.	10.3	101.	5.7	5.15	140.
43458		123.	69.	9.1	107.	5.2	4.50	142.
43462		114.	95.	10.1	108.	5.7	5.54	143.
43468		140.	95.	10.3	102.	6.4	4.97	141.
43486		143.	56.	10.3	106.	4.6	4.20	140.
43489		116.	68.	9.8	105.	4.7	7.11	139.
43502		125.	63.	10.7	102.	5.9	4.58	142.
43511		120.	87.	9.9	102.	5.5	5.29	139.
43515		137.	69.	11.1	106.	4.9	5.66	144.
MEAN		126.	77.	10.2	104.	5.4	5.16	141.
S.D.		10.3	16.1	0.54	2.5	0.57	0.838	1.8
N		10	10	10	10	10	10	10

mg/dL = MILLIGRAMS/DECILLITER,      mEq/L = milliEquivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN	TOTAL PROTEIN	GLOBULIN	A/G RATIO	TOTAL BILI	UREA NITROGEN	CREAT- ININE	ALKALINE PHOS TSE	ASPARTATE TRANSFER	GLUTAMYL TRANSFER
GROUP: 300 MG/KG/DAY	FEMALES									
43463	6.2	8.6	2.4	2.58	0.2	11.8	0.3	33.	63.	91.
43475	5.3	8.0	2.7	1.96	0.2	13.9	0.3	34.	27.	60.
43478	6.3	8.5	2.2	2.86	0.2	18.4	0.3	25.	24.	65.
43491	5.9	8.2	2.3	2.57	0.1	13.5	0.3	57.	29.	57.
43495	5.1	7.3	2.2	2.32	0.2	10.2	0.4	52.	32.	98.
43496	6.0	8.5	2.5	2.40	0.1	9.5	0.3	24.	22.	51.
43508	4.8	7.4	2.6	1.85	0.1	16.5	0.4	38.	25.	57.
43513	5.1	7.7	2.6	1.96	0.1	20.5	0.4	35.	27.	2.
43516	6.4	8.8	2.4	2.67	0.2	12.6	0.3	43.	31.	91.
43517	5.2	7.5	2.3	2.26	0.1	14.3	0.3	44.	30.	53.
MEAN	5.6	8.1	2.4	2.34	0.2	14.1	0.3	39.	31.	72.
S.D.	0.59	0.55	0.18	0.338	0.05	3.49	0.05	10.7	11.7	0.
N	10	10	10	10	10	10	10	10	10	0.7

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mEq/L	PHOS- PHORUS mg/dL	POTAS- SIUM mEq/L	SODIUM mEq/L	GROUP: 300 MG/KG/DAY	
								FEMALES	Males
43463	121.	65.	11.4	108.	5.8	4.97	142.		
43475	121.	79.	11.0	109.	5.7	5.91	142.		
43478	139.	93.	10.7	104.	5.5	4.90	138.		
43491	125.	77.	11.0	106.	5.7	5.39	145.		
43495	122.	78.	9.7	100.	6.7	5.64	139.		
43496	125.	103.	10.9	103.	5.5	5.01	140.		
43508	118.	50.	9.6	105.	3.8	4.32	137.		
43513	107.	58.	9.5	106.	4.6	4.90	139.		
43516	119.	94.	10.9	103.	5.5	5.41	140.		
43517	120.	58.	10.0	107.	4.8	4.97	140.		
MEAN	122.	76.	10.5	105.	5.4	5.14	140.		
S.D.	7.9	17.6	0.70	2.7	0.79	0.452	2.3		
N	10	10	10	10	10	10	10		

mg/dL = MILLIGRAMS/DECILITER,      mEq/L = milliEquivalents/Liter

PAGE 14  
WEEK 13

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION),  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL SERUM CHEMISTRY VALUES

GROUP:	1000 MG/RG/DAY	FEMALES		UREA NITROGEN mg/dL	CREATININE mg/dL	ALKALINE PHOS TSE mg/dL	ALANINE TRANSFER mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
		ALBUMIN g/dL	TOTAL PROTEIN g/dL						
		A/G RATIO	BILI g/dL						
43440	5.7	7.7	2.0	2.85	0.6	23.1	0.7	25.	50.
43456	6.2	8.8	2.6	2.38	0.1	12.6	0.3	22.	26.
43460	5.5	7.7	2.2	2.50	0.1	16.8	0.4	25.	26.
43466	6.0	8.8	2.8	2.14	0.2	17.0	0.3	27.	27.
43477	5.3	8.5	3.2	1.66	0.2	14.1	0.3	38.	63.
43479	5.6	7.7	2.1	2.67	0.1	16.7	0.4	32.	31.
43481	5.4	8.1	2.7	2.00	0.1	14.2	0.3	21.	61.
43484	6.0	8.9	2.9	2.07	0.1	12.8	0.3	38.	4.
43492	5.8	8.1	2.3	2.52	0.2	14.7	0.3	38.	69.
43503	5.8	8.2	2.4	2.42	0.3	12.9	0.3	36.	1.
								40.	64.
								52.	82.
								52.	5.
								82.	2.
								82.	2.
MEAN	5.7	8.3	2.5	2.32	0.2	15.5	0.4	34.	50.
S.D.	0.29	0.48	0.39	0.353	0.16	3.16	0.13	11.1	63.
N	10	10	10	10	10	10	10	10	0.

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

mg/dL = MILLIGRAMS/DECILITER

PAGE 15  
 WEEK 13

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 104 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP : 1000 MG/KG/DAY	GLUCOSE	CHOL- ESTEROL	CALCIUM	CHLORTIDE	PHOS- PHORUS	POTAS- SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
	FEMALES						
43440	158.	64.	9.8	111.	5.3	6.40	137.
43445	111.	84.	10.4	111.	5.3	5.50	140.
43446	125.	50.	9.9	113.	5.2	4.61	141.
43446	120.	67.	10.9	113.	5.5	5.09	144.
43447	103.	62.	10.4	105.	5.6	5.31	138.
43447	146.	81.	10.1	114.	4.6	4.34	141.
43448	139.	53.	11.0	113.	5.3	4.94	142.
43448	110.	57.	11.2	110.	5.7	5.44	141.
43449	119.	99.	10.5	109.	6.2	4.68	141.
43503	112.	65.	10.2	106.	6.6	5.24	141.
MEAN	124.	68.	10.4	111.	5.5	5.16	141.
S.D.	17.8	15.3	0.47	3.1	0.55	0.579	2.0
N	10	10	10	10	10	10	10

mg/dL = MILLIGRAMS/DECILLITER,

mEq/L = milliequivalents/Liter

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP:	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOSPHATE TSE U/L	ASPARTATE TRANSFER TRANSFER U/L	GLUTAMYL TRANSFER U/L
43289	4.2	6.4	2.2	1.91	0.2	15.6	0.5	63.	39.	128.
43295	4.2	7.3	3.1	1.35	0.2	18.3	0.4	84.	296.	520.
43308	4.2	6.8	2.6	1.62	0.1	12.9	0.5	64.	39.	0.
43316	4.3	6.9	2.6	1.65	0.2	14.9	0.3	67.	42.	116.
43326	4.7	7.4	2.7	1.74	0.2	17.0	0.5	125.	54.	129.
MEAN	4.3	7.0	2.6	1.65	0.2	15.7	0.4	81.	94.	0.
S.D.	0.22	0.40	0.32	0.204	0.04	2.06	0.09	26.2	113.1	209.
N	5	5	5	5	5	5	5	5	174.3	0.0

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES  
WEEK 17

ANIMAL	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORIDE	PHOS-PHORUS	POTAS-SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
GROUP: 0 MG/KG/DAY							
	MALES						
43289	172.	75.	9.6	102.	7.4	5.65	142.
43295	175.	76.	10.1	101.	6.2	5.58	142.
43308	179.	73.	9.8	99.	7.4	5.65	143.
43316	122.	88.	9.7	102.	6.8	5.68	145.
43326	131.	73.	10.0	98.	8.1	5.52	143.
MEAN	156.	77.	9.8	100.	7.2	5.62	143.
S.D.	27.0	6.3	0.21	1.8	0.72	0.065	1.2
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER, mEq/L = milliequivalents/Liter

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 105 (WEEK 1-7 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP: 100 MG/KG/DAY	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS/TSE U/L	ASPARTATE TRANSFER TSE U/L	ALANINE TRANSFER TSE U/L	GLUTAMYL TRANSFER TSE U/L
43285	4.4	7.0	2.6	1.69	0.2	14.9	0.3	94.	31.	115.	0.
43293	4.3	7.5	3.2	1.34	0.1	14.9	0.4	101.	45.	90.	0.
43311	4.4	6.8	2.4	1.83	0.1	12.5	0.3	76.	39.	125.	0.
43320	4.4	7.2	2.8	1.57	0.2	13.2	0.4	77.	55.	100.	0.
43340	4.5	6.8	2.3	1.96	0.2	17.9	0.4	65.	62.	202.	0.
MEAN	4.4	7.1	2.7	1.68	0.2	14.7	0.4	83.	46.	126.	0.
S.D.	0.07	0.30	0.36	0.239	0.05	2.09	0.05	14.6	12.4	44.4	0.0
N	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

PAGE 3  
 WEEK 17

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES  
WEEK 17

ANIMAL GROUP: 100 MG/KG/DAY	GLUCOSE	CHOL- ESTEROL	CALCIUM	CHLORIDE	PHOS- PHORUS	POTAS- SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
MALES							
43285	139.	63.	9.9	103.	7.2	6.09	145.
43293	140.	73.	9.9	101.	7.5	6.07	144.
43311	127.	66.	9.9	100.	6.4	6.19	140.
43320	145.	59.	9.6	100.	6.9	5.55	143.
43340	136.	70.	9.7	102.	7.8	5.49	145.
MEAN	137.	66.	9.8	101.	7.2	5.88	143.
S.D.	6.7	5.5	0.14	1.3	0.54	0.331	2.1
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILLITER, mEq/L = milliequivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL ANIMAL g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOSPHATE TSE U/L	ASPARTATE TRANSFER TSE U/L	GLUTAMYL TRANSFER TSE U/L
GROUP: 300 MG/KG/DAY									
43290	4.4	6.9	2.5	1.76	0.2	14.0	0.5	78.	29.
43307	4.7	7.7	3.0	1.57	0.2	14.2	0.3	85.	32.
43309	4.6	7.6	3.0	1.53	0.2	13.0	0.3	103.	107.
43318	4.8	7.9	3.1	1.55	0.2	10.8	0.3	58.	143.
43322	4.5	7.2	2.7	1.67	0.2	14.8	0.3	68.	31.
MEAN	4.6	7.5	2.9	1.62	0.2	13.4	0.3	85.	93.
S.D.	0.16	0.40	0.25	0.097	0.00	1.57	0.09	13.1	32.
N	5	5	5	5	5	5	5	5	88.

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP:	GLUCOSE	CHOL- ESTEROL	CALCIUM	CHLORIDE	PHOS- PHORUS	POTAS- SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
300 MG/KG/DAY							
MALES							
43290	152.	62.	9.6	102.	7.3	5.59	144.
43307	130.	104.	10.0	101.	6.9	5.54	143.
43309	146.	102.	10.6	101.	8.0	5.96	145.
43318	145.	101.	10.6	99.	6.7	6.39	142.
43322	136.	69.	10.1	102.	7.5	5.78	144.
MEAN	142.	88.	10.2	101.	7.3	5.85	144.
S.D.	8.7	20.4	0.43	1.2	0.51	0.344	1.1
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER, mEq/L = milliequivalents/Liter

PAGE 6  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

GROUP:	1000 MG/KG/DAY	MALES						UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS/TSE TRANSFER mg/dL	ASPARTATE TRANSFER mg/dL	GLUTAMYL TRANSFER U/L
		ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILIRUBIN mg/dL	URIC ACID mg/dL					
43277	4.6	7.3	2.7	1.70	0.1	16.6	0.5	89.	33.	89.	0.	0.
43278	4.4	7.2	2.8	1.57	0.1	13.0	0.4	94.	37.	89.	0.	0.
43280	4.4	7.2	2.8	1.57	0.1	13.3	0.2	83.	36.	94.	0.	0.
43281	4.4	7.4	3.0	1.47	0.1	14.8	0.4	80.	44.	149.	0.	0.
43282	4.4	6.8	2.4	1.83	0.2	13.8	0.4	82.	35.	112.	0.	0.
MEAN	4.4	7.2	2.7	1.63	0.1	14.3	0.4	86.	37.	107.	0.	0.
S.D.	0.09	0.23	0.22	0.139	0.04	1.46	0.11	5.8	4.2	25.5	0.0	5
N	5	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 7  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORIDE	PHOS-PHORUS	POTAS-SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
GROUP: 1000 MG/KG/DAY							
	MALES						
43277	142.	80.	9.8	102.	6.5	5.84	142.
43278	150.	65.	9.5	103.	7.2	5.33	142.
43280	157.	82.	10.3	101.	6.5	4.92	142.
43281	159.	89.	10.2	103.	6.7	5.19	145.
43282	137.	56.	9.4	101.	7.6	5.82	142.
MEAN	149.	74.	9.8	102.	6.9	5.42	143.
S.D.	9.5	13.5	0.40	1.0	0.48	0.402	1.3
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,      mEq/L = milliequivalents/Liter

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL GROUP:	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS. TSE mg/dL	ASPARTATE TRANSFER U/L	GLUTAMYL TRANSFER U/L
43398	5.1	7.4	2.3	2.22	0.2	14.6	0.4	59.	42.
43405	5.2	7.6	2.4	2.17	0.2	14.9	0.3	34.	29.
43409	5.7	8.3	2.6	2.19	0.1	19.8	0.3	21.	73.
43423	5.3	7.4	2.1	2.52	0.2	17.5	0.4	48.	62.
43432	4.7	7.6	2.9	1.62	0.2	14.5	0.4	53.	41.
MEAN	5.2	7.7	2.5	2.14	0.2	16.3	0.4	43.	33.
S.D.	0.36	0.37	0.30	0.326	0.04	2.33	0.05	15.4	85.
N	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER, g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 9  
WEEK 17

PROJECT NO :WIL-186012  
SPONSOR:CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM	CHLORIDE	PHOS- PHORUS mEq/L	POTAS- SIUM mg/dL	SODIUM mEq/L
			mg/dL	mEq/L		mg/dL	mEq/L
GROUP: 0 MG/KG/DAY							
FEMALES							
43398	127.	90.	10.1	104.	5.6	5.09	144.
43405	137.	84.	10.2	107.	4.1	4.37	145.
43409	125.	86.	10.6	100.	4.4	4.88	140.
43423	117.	69.	10.1	103.	5.9	5.46	143.
43432	130.	77.	10.0	102.	5.6	5.16	143.
MEAN	127.	81.	10.2	103.	5.1	4.99	143.
S.D.	7.3	8.3	0.23	2.6	0.81	0.405	1.9
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER, mEq/L = milliEquivalents/Liter

PAGE 10  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN g/dL	TOTAL PROTEIN g/dL	GLOBULIN A/G RATIO	TOTAL BILI mg/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS/TSE TRANSFER		ASPARTATE TRANSFER		GLUTAMYL TRANSFER U/L
							mg/dL	U/L	mg/dL	U/L	
<b>GROUP: 100 MG/KG/DAY</b>											
43400	5.2	7.9	2.7	1.93	0.1	14.9	0.4	30.	42.	78.	
43407	3.9	7.0	3.1	1.26	0.2	24.0	0.6	42.	41.	123.	
43413	5.3	7.6	2.3	2.30	0.4	13.7	0.3	33.	46.	109.	
43416	4.8	7.3	2.5	1.92	0.1	13.2	0.3	27.	37.	95.	
43419	4.8	7.3	2.5	1.92	0.2	14.1	0.3	44.	116.	249.	
MEAN	4.8	7.4	2.6	1.87	0.2	16.0	0.4	35.	56.	131.	
S.D.	0.55	0.34	0.30	0.376	0.12	4.53	0.13	7.5	33.5	68.1	
N	5	5	5	5	5	5	5	5	5	5	

U/L = INTERNATIONAL UNIT/LITER,    g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

PAGE 11  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE mg/dL	CHOL- ESTEROL mg/dL	CALCIUM mg/dL	CHLORIDE mg/dL	PHOS- PHORUS mEq/L	SODIUM- SULFATE mEq/L	
						POTAS- SIUM mg/dL	mEq/L
GROUP: 100 MG/KG/DAY							
FEMALES							
43400	127.	98.	10.4	104.	6.1	5.51	143.
43407	113.	62.	9.4	103.	9.0	5.78	143.
43413	112.	67.	10.1	100.	6.3	6.65	140.
43416	110.	73.	9.8	102.	5.2	5.82	141.
43419	104.	77.	9.9	104.	4.8	4.81	142.
MEAN	113.	75.	9.9	103.	6.3	5.71	142.
S.D.	8.5	13.9	0.37	1.7	1.64	0.662	1.3
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliequivalents/Liter

PAGE 12  
WEEK 17

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	ALBUMIN PROTEIN g/dL	GLOBULIN A/G RATIO	TOTAL BILI g/dL	UREA NITROGEN mg/dL	CREAT- ININE mg/dL	ALKALINE PHOS' TSE mg/dL	ALANINE TRANSFER TSE U/L	ASPARTATE TRANSFER TSE U/L	GLUTAMYL TRANSFER TSE U/L
43402	5.6	9.2	3.6	1.56	0.2	20.8	0.6	33.	494.
43426	4.6	7.2	2.6	1.77	0.1	15.7	0.4	47.	727.
43442	4.9	7.6	2.7	1.81	0.1	15.7	0.4	30.	152.
43446	4.8	7.3	2.5	1.92	0.2	15.2	0.4	36.	89.
43461	4.9	7.9	3.0	1.63	0.1	17.9	0.4	55.	138.
MEAN	5.0	7.8	2.9	1.74	0.1	17.1	0.4	37.	91.
S.D.	0.38	0.81	0.44	0.144	0.05	2.34	0.09	134.	0.
N	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER,

mg/dL = MILLIGRAMS/DECILITER

PAGE 13  
WEEK 17

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	GLUCOSE	CHOL-ESTEROL	CALCIUM	CHLORIDE	PHOSPHORUS	POTAS-SIUM	SODIUM
	mg/dL	mg/dL	mg/dL	mEq/L	mg/dL	mEq/L	mEq/L
GROUP: 300 MG/KG/DAY							
	FEMALES						
43402	139.	150.	10.5	99.	5.2	4.63	142.
43426	112.	59.	9.6	103.	5.9	5.67	142.
43442	109.	76.	10.1	104.	5.4	4.90	143.
43446	128.	72.	9.8	104.	5.6	4.74	143.
43461	124.	75.	10.2	104.	6.2	6.23	141.
MEAN	122.	86.	10.0	103.	5.7	5.23	142.
S.D.	12.2	36.2	0.35	2.2	0.40	0.690	0.8
N	5	5	5	5	5	5	5

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliEquivalents/Liter

PAGE 14  
WEEK 17

PROJECT NO : WII-186012  
SPONSOR : CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	TOTAL PROTEIN g/dL	GLOBULIN g/dL	A/G RATIO	TOTAL		UREA NITROGEN mg/dL	CREATININE mg/dL	ALKALINE PHOS/TSE mg/dL	ALANINE TRANSFERASE U/L	ASPARTATE TRANSFERASE U/L	GLUTAMYL TRANSFERASE U/L
				BILLI	NITROGEN						
GROUP : 1000 MG/KG/DAY	FEMALES										
43401	5.8	8.2	2.4	2.42	0.2	16.6	0.4	31.	43.	104.	0.
43410	5.1	7.6	2.5	2.04	0.1	21.3	0.4	46.	27.	66.	0.
43421	5.1	8.0	2.9	1.76	0.1	14.4	0.3	39.	27.	86.	0.
43429	5.2	7.7	2.5	2.08	0.2	14.7	0.4	34.	71.	165.	1.
43430	4.9	7.4	2.5	1.96	0.1	15.3	0.3	32.	28.	89.	0.
MEAN	5.2	7.8	2.6	2.05	0.1	16.5	0.4	36.	39.	102.	0.
S.D.	0.34	0.32	0.19	0.240	0.05	2.83	0.05	6.2	19.0	37.7	0.4
N	5	5	5	5	5	5	5	5	5	5	5

U/L = INTERNATIONAL UNIT/LITER,

g/dL = GRAMS/DECILITER, mg/dL = MILLIGRAMS/DECILITER

PAGE 15  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 105 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM CHEMISTRY VALUES

ANIMAL	1000 MG/KG/DAY	GLUCOSE		CHOLESTEROL		CALCIUM		CHLORIDE		PHOSPHORUS		POTAS-SIUM	
		mg/dL	mg/dL	mg/dL	mg/dL	mEq/L	mEq/L	mg/dL	mg/dL	mEq/L	mEq/L	mEq/L	mEq/L
<b>GROUP: FEMALES</b>													
43401		142.	123.	11.0	10.5	5.2	4.79	145.					
43410		121.	61.	10.0	105.	5.4	5.11	143.					
43421		138.	104.	10.8	103.	6.1	5.40	142.					
43429		134.	95.	10.6	102.	5.7	4.93	142.					
43430		113.	76.	9.7	102.	6.0	5.55	142.					
MEAN	130.	92.	10.4	103.	5.7	5.16	143.						
S.D.	12.2	24.1	0.55	1.5	0.38	0.317	1.3						
N	5	5	5	5	5	5	5						

mg/dL = MILLIGRAMS/DECILITER,

mEq/L = milliEquivalents/Liter

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R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBBD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

GROUP:	0 MG/KG/DAY	MALES						NIT	URO	TVOL								
		M	A	C	R	O	APP	SG	PH	PRO	GLU	KET	BIL	BLD	LEU			
43365	DS	HAZ	1.025	5.5	1+			NG	TR		NG	NG	NG	NG	0.2	13.0		
43368	DS	HAZ	1.024	6.0	1+			NG	TR		NG	TR	NG	NG	0.2	12.0		
43369	DS	HAZ	1.036	6.0	2+			NG	NG		NG	NG	NG	NG	0.2	3.5		
43379	DS	HAZ	1.042	6.0	2+			NG	TR		NG	NG	NG	NG	0.2	5.0		
43391	DS	HAZ	1.020	5.5	TR			NG	NG		NG	NG	NG	NG	0.2	10.0		
MEAN			1.029	5.8														
S.D.			0.0092	0.27														
N			5	5														

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, DS=DARK STRAW, TR=TRACE  
2+ =SLIGHT TO MODERATE, TR=TRACE, 1+=TRACE TO SLIGHT,

MACRO CODE -

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP: 100 MG/KG/DAY				MALES			
	M	A	C	R	O	APP	SG	PH
43371	LA	HAZ	1.030	6.0	1+	NG	TR	NG
	DS	CLD	1.024	6.0	1+	NG	TR	NG
43380	DS	HAZ	1.030	6.0	1+	NG	TR	NG
43382	S	CLD	1.017	6.5	1+	NG	NG	NG
43384	S	HAZ	1.015	6.5	1+	NG	NG	NG
43386	S	HAZ				NG	NG	NG

MEAN  
S.D.  
N

1.023  
0.0070  
5

6.2  
0.27  
5

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, DS=DARK STRAW, LA=LIGHT AMBER, HAZ=HAZY, CLD=CLOUDY, NG=NEGATIVE,  
1+=TRACE TO SLIGHT, TR=TRACE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

GROUP:	300 MG/KG/DAY	MALES				SG	PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL	
		M	A	C	R												
ANIMAL		CLOR															
43363		LA	HAZ	1.024	6.5	1+	NG	TR	NG	3+	NG	NG	NG	NG	0.2	10.5	
43383		LA	HAZ	1.025	6.0	1+	NG	TR	NG	NG	NG	NG	NG	NG	0.2	10.0	
43385		DS	HAZ	1.038	6.0	2+	NG	TR	NG	NG	NG	NG	NG	NG	0.2	7.0	
43388		LS	HAZ	1.013	6.5	TR	NG	NG	NG	NG	NG	NG	NG	NG	0.2	27.0	
43392		A	CLD	1.030	6.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	9.0	
MEAN				1.026	6.2										0.2	12.7	
S.D.				0.091	0.27										0.00	8.11	
N				5	5										5	5	

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

COLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, LS=LIGHT STRAW, DS=DARK STRAW, A=ABUNDANT, LA=LIGHT AMBER, HAZ=HAZY, CLD=CLOUDY,  
NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=MODERATE TO ABUNDANT, TR=TRACE, 3+=MODERATE TO SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP: 1000 MG/KG/DAY	MALES				PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL	
		M	A	C	R	O	APP	SG	PH						
43362	A	CLD	1.029	5.5	1+		NG	TR	NG	NG	NG	NG	NG	0.2	10.0
43372	DA	CLD	1.046	6.0	2+		NG	TR	NG	NG	NG	NG	NG	0.2	8.0
43373	S	HAZ	1.015	6.5	1+		NG	NG	NG	1+	TR	NG	NG	0.2	19.0
43377	LS	HAZ	1.010	6.5	NG		NG	NG	NG	NG	NG	NG	NG	0.2	30.0
43397	A	TRB	1.042	6.0	1+		NG	TR	NG	NG	NG	NG	NG	0.2	7.0
MEAN			1.028	6.1										0.2	14.8
S.D.			0.0159	0.42										0.00	9.73
N			5	5										5	5

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, LS=LIGHT STRAW, A=ABUNDANT, DA=DARK AMBER, HAZ=HAZY, CLD=CLOUDY, TRB=TURBID,  
NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE, 3+=MODERATE TO SEVERE, 4+=SEVERE

MACRO CODE -

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP:	0 MG/KG/DAY	FEMALES			PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL
			M	A	C										
	CLOR	APP	R	O											
43467	DS	HAZ	1.032	6.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	5.0
43474	DS	HAZ	1.028	6.5	TR	NG	NG	NG	NG	NG	NG	NG	NG	0.2	7.0
43483	LA	HAZ	1.050	5.0	2+	NG	NG	1+	NG	NG	NG	NG	NG	0.2	2.0
43497	DS	HAZ	1.032	6.0	TR	NG	NG	NG	NG	NG	NG	NG	NG	0.2	7.5
43501	LA	HAZ	1.024	5.5	NG	NG	NG	NG	NG	NG	NG	NG	NG	0.2	10.5
MEAN			1.033	5.8											
S.D.			0.0100	0.57											
N			5	5											

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS  
mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, DS=DARK STRAW, LA=LIGHT AMBER, HAZ=HAZY, NG=NEUTRAL, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, TR=TRACE

MACRO CODE -

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CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,

NIT=NITRITE, URO=URIBILINOGEN, DS=DARK STRAW, LA=LIGHT AMBER, HAZ=HAZY, NG=NEUTRAL, 1+=TRACE TO SLIGHT,

2+=SLIGHT TO MODERATE, TR=TRACE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

GROUP:	100 MG/KG/DAY	FEMALES						BLD	LEU	NIT	URO	TVOL	
		M	A	C	R	O	APP	SG	PH	PRO	GLU	KET	
43486	LS	HAZ	1.026	5.0	1+		NG	NG			NG	NG	mg/dL
43489	DS	HAZ	1.056	5.5	3+		NG	NG			NG	NG	0.2
43502	S	CLR	1.026	6.0	TR		NG	NG			NG	NG	1.0
43511	LS	HAZ	1.015	6.0	NG		NG	NG			NG	NG	0.2
43515	S	HAZ	1.020	5.0	TR		NG	NG			1+	NG	10.0
											NG	NG	0.2
											NG	NG	0.2
MEAN			1.029	5.5									mL
S.D.			0.0160	0.50									
N			5	5									

MEAN  
S.D.  
N

mg/dL = MILLIGRAMS/DECILITER, mg = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, LS=LIGHT STRAW, DS=DARK STRAW, CLR=CLEAR, HAZ=HAZY, NG=NEGATIVE,  
1+=TRACE TO SLIGHT, 3+=MODERATE TO ABUNDANT, TR=TRACE

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP:	300 MG/KG/DAY				FEMALES				LEU	NIT	URO	TVOL	
		M	A	C	R	O	APP	SG	PH	PRO	GLU	KET	BLD	
43496	DS	HAZ	1.027	6.0	1+					NG	TR			mg/dL
43508	DS	HAZ	1.031	5.0	1+					NG	NG	NG	NG	mg/dL
43513	DS	HAZ	1.033	6.0	1+					NG	NG	NG	NG	mg/dL
43516	DS	HAZ	1.033	5.5	1+					NG	NG	NG	NG	mg/dL
43517	DS	HAZ	1.027	5.5	TR					NG	NG	NG	NG	mg/dL
														mL
MEAN		1.030	5.6											
S.D.		0.0030	0.42											
N		5	5											

MEAN  
S.D.  
N

mg/dL = MILLIGRAMS/DECILITER,      mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, DS=DARK STRAW, HAZ=HAZY, NG=NEUTRAL, 1+=TRACE TO SLIGHT, TR=TRACE

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

TABLE 106 (WEEK 3 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	FEMALES				PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL	
	M	A	C	R											mg/dL
	CLOR	APP	SG												mL
43479	DA	HAZ	1.074	5.5	3+	NG	1.0	2.5							
43481	LS	HAZ	1.014	5.5	NG	NG	NG	NG	NG	NG	NG	NG	0.2	20.0	
43484	LS	HAZ	1.013	6.0	NG	NG	NG	NG	NG	NG	NG	NG	0.2	13.0	
43492	DS	HAZ	1.046	6.0	1+	NG	TR	NG	NG	NG	NG	NG	0.2	5.0	
43503	S	HAZ	1.030	5.0	1+	NG	0.2	5.0							
MEAN			1.035	5.6									0.4	9.1	
S.D.			0.0255	0.42									0.36	7.27	
N			5	5									5	5	

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, LS=LIGHT STRAW, DS=DARK STRAW, DA=DARK AMBER, HAZ=HAZY, NG=NEGATIVE,  
 1+=TRACE TO SLIGHT, 3+=MODERATE TO ABUNDANT, TR=TRACE

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP :	0 MG/KG/DAY	MALES												
		WBC	M	I	C	R	O	EPI	BAC	AMC	HA	TPH	COX	UAC
ANIMAL	RBC													OTHER
43365	NG	NG	NG	F	NG	NG	F	NG	NG	NG	NG	NG	NG	
43368	NG	NG	NG	M	NG	NG	NG	NG	NG	NG	NG	NG	NG	
43369	NG	NG	NG	F	NG	NG	NG	NG	NG	NG	NG	NG	NG	
43379	NG	NG	NG	R	NG	NG	NG	NG	NG	NG	NG	NG	NG	M-SPERM
43391	NG	NG	NG	R	NG	NG	NG	NG	NG	NG	NG	NG	NG	F-SPERM

----- MICRO CODE -----  
EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP: 100 MG/KG/DAY MALES															
ANIMAL	WBC	RBC	M	I	C	R	O	EPI	BAC	AMC	HA	TPH	COX	UAC	OTHER
43371	NG	0-1	F	M	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	M-SPERM
43380	0-1	NG	F	F	NG	NG	F	NG	NG	NG	F	NG	NG	NG	A-SPERM
43382	0-1	NG	F	M	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	A-SPERM
43384	NG	NG	NG	F	NG	NG	F	NG	NG	NG	F	NG	NG	NG	M-SPERM
43386	NG	NG	NG	F	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	

----- MICRO CODE -----  
EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, F=FEW, M=MODERATE, A=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP: 300 MG/KG/DAY		MALES								
ANIMAL	WBC	RBC	EPI	BAC	AMC	HA	TPH	COX	UAC	OTHER
43363	0 - 1	0 - 1	NG	F	NG	NG	NG	NG	NG	
43383	NG	NG	A	NG	NG	NG	F	NG	NG	F-SPEM
43385	NG	NG	NG	R	NG	NG	NG	NG	NG	
43388	NG	NG	R	M	NG	NG	NG	NG	NG	F-SPEM
43392	0 - 1	NG	R	M	NG	NG	NG	NG	NG	M-FECAL CONTAM
										A-SPEM
										M-FECAL CONTAM

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HYPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP:	1000 MG/KG/DAY	MALES										MICRO CODE	
		M	I	C	R	O	EPI	BAC	AMC	HA	TPH	COX	
ANIMAL	WBC	RBC											
43362	NG	NG	NG	F	NG	NG	M	NG	NG	NG	NG	M-SPERM	CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE, UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEN, M=MODERATE, A=ABUNDANT
43372	NG	NG	F	NG	NG	NG	A	NG	NG	NG	NG	M-SPERM	
43373	NG	NG	F	NG	NG	NG	NG	NG	NG	NG	NG	F-FECAL CONTAM	
43377	NG	NG	NG	R	NG	NG	NG	NG	NG	NG	NG	R-SPERM	
43397	NG	NG	NG	NG	NG	NG	M	NG	NG	NG	NG		

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE, UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEN, M=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP :	0 MG/KG/DAY	FEMALES							
		M	I	C	R	O	EPI BAC AMC HA TPH COX UAC		
ANIMAL	WBC	RBC	EPI	BAC	AMC	HA	TPH	COX	UAC
43467	NG	NG	NG	F	NG	NG	NG	NG	NG
43474	NG	0 - 1	F	F	NG	NG	NG	NG	NG
43483	NG	NG	R	F	NG	NG	NG	NG	NG
43497	NG	NG	R	NG	NG	NG	NG	NG	NG
43501	0 - 1	NG	NG	F	NG	NG	NG	NG	NG

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP:	100 MG/KG/DAY	FEMALES										
			M	I	C	R	O	EPI	BAC	AMC	HA	TPH	COX	UAC
43486		0 - 1	0 - 1	NG	M	NG	NG	NG	NG	NG	NG	NG	NG
43489		NG	NG	NG	F	NG	NG	F	NG	NG	NG	NG	NG
43502		NG	NG	F	F	NG	NG	NG	NG	NG	NG	NG	NG
43511		NG	NG	NG	F	NG	NG	NG	NG	NG	NG	NG	NG
43515		NG	0 - 1	NG	R	NG	NG	NG	NG	NG	NG	NG	NG

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIFLIE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP :	300 MG/KG/DAY	FEMALES							
		M	I	C	R	O	UAC		
ANIMAL	WBC	RBC	EPI	BAC	AMC	HA	TPH	COX	UAC
43496	NG	0 - 4	F	M	NG	NG	NG	NG	NG
43508	NG	NG	NG	F	NG	NG	NG	NG	NG
43513	NG	NG	NG	NG	NG	NG	NG	NG	NG
43516	NG	NG	F	NG	NG	NG	NG	NG	NG
43517	NG	NG	F	NG	NG	NG	NG	NG	NG

----- MICRO CODE -----  
EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, F=FEW, M=MODERATE

PAGE 7  
WEEK 3

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 107 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBBD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

GROUP: 1000 MG/KG/DAY		FEMALES								
ANIMAL	WBC	M RBC	I EPI	C BAC	R AMC	O HA	TPH	COX	UAC	OTHER
43479	NG	NG	NG	NG	NG	NG	NG	NG	NG	
43481	0-1	0-1	NG	NG	NG	NG	NG	NG	NG	F-FECAL CONTAM
43484	NG	NG	NG	F	NG	NG	NG	NG	NG	F-FECAL CONTAM
43492	NG	NG	NG	F	NG	NG	NG	NG	NG	
43503	NG	NG	NG	F	NG	NG	NG	NG	NG	

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIFLIE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, F=FEW

PVVA.02  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

GROUP :	0 MG/KG/DAY	MALES				SG	PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL	
		M	C	R	O												
		ANIMAL	CLOR	APP													
43332	S	HAZ	1.033	5.0	2+	NG	NG	NG	NG	NG	NG	NG	NG	NG	0.2	6.0	
43334	S	HAZ	1.034	6.5	2+	NG	NG	NG	NG	NG	NG	NG	NG	NG	0.2	6.5	
43336	S	CLD	1.072	5.5	3+	NG	NG	1+	NG	NG	NG	NG	NG	P+	0.2	3.0	
43339	S	HAZ	1.020	6.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	NG	0.2	11.0	
43349	S	HAZ	1.068	5.5	3+	NG	NG	1+	NG	NG	NG	NG	NG	NG	0.2	2.0	
43365	S	HAZ	1.056	6.0	3+	NG	NG	NG	NG	2+	NG	NG	NG	NG	0.2	5.5	
43368	S	HAZ	1.037	6.5	2+	NG	NG	NG	NG	NG	NG	NG	NG	NG	0.2	7.0	
43369	S	CLD	1.072	6.5	3+	NG	TR	1+	NG	NG	NG	NG	NG	NG	1.0	1.5	
43379	S	HAZ	1.030	6.5	1+	NG	TR	NG	0.2	8.0							
43391	S	HAZ	1.049	6.5	2+	NG	TR	NG	0.2	4.5							

MEAN  
S.D.  
N

1.047  
0.0190  
10

6.1  
0.55  
1.0

mg/dL = MILLIGRAMS/DECILLITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, CLD=CLODY, NG=CLOUDY, TR=ABUNDANT, P=POSITIVE,  
2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE, P+=POSITIVE

MACRO CODE -

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PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION),  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP: 1.00 MG/KG/DAY	MALES				PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL		
		M	A	C	R												
CLOR	APP	SG															
43342	S	CLD	1.082	5.5	3+	NG	1+	NG	NG	NG	NG	NG	NG	1.0	2.5		
43350	S	HAZ	1.084	5.5	3+	NG	TR	1+	NG	NG	NG	NG	NG	0.2	4.0		
43351	S	HAZ	1.034	6.0	2+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	8.0		
43354	S	HAZ	1.032	6.5	3+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	8.0		
43364	S	HAZ	1.041	6.5	3+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	5.0		
43371	S	HAZ	1.021	6.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	11.0		
43380	S	HAZ	1.021	7.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	13.0		
43382	S	CLD	1.062	6.0	3+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	3.5		
43384	S	CLD	1.039	6.5	2+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	7.0		
43386	S	HAZ	1.016	6.5	1+	NG	NG	NG	NG	NG	TR	NG	NG	0.2	3.5		

MEAN 1.043 6.2  
S.D. 0.0247 0.48  
N 10 10

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

mg/dL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, HAZ=HAZY, CLD=CLODDY, 3+=MODERATE TO ABUNDANT, TR=TRACE  
3+=MODERATE TO ABUNDANT, TR=TRACE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE,

MACRO CODE -

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, HAZ=HAZY, CLD=CLODDY, 3+=MODERATE TO ABUNDANT, TR=TRACE  
3+=MODERATE TO ABUNDANT, TR=TRACE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE,

PROJECT NO : WTL-186012  
 SPONSOR : CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

ANIMAL	GROUP:	300 MG/KG/DAY MALES				PH	PRO	GLU	KET	BIL	BLD	LEU	NIT	URO	TVOL
		COLOR	M	A	C										
43323	S	HAZ	1.060	6.0	3+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	2.5
43331	S	HAZ	1.054	6.0	3+	NG	1+	NG	NG	NG	NG	NG	NG	0.2	3.5
43341	S	HAZ	1.016	7.0	1+	NG	NG	NG	1+	NG	NG	NG	NG	0.2	27.0
43355	S	HAZ	1.041	5.5	3+	NG	NG	NG	NG	TR	NG	NG	NG	0.2	3.0
43361	S	HAZ	1.012	7.0	1+	NG	NG	NG	NG	TR	NG	NG	NG	0.2	30.0
43363	S	HAZ	1.036	6.0	2+	NG	TR	NG	NG	NG	NG	NG	NG	0.2	8.0
43383	LS	HAZ	1.010	7.0	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	30.0
43385	S	HAZ	1.015	6.5	TR	NG	NG	NG	2+	NG	NG	NG	NG	0.2	17.0
43388	LS	HAZ	1.010	6.5	1+	NG	NG	NG	NG	TR	NG	NG	NG	0.2	30.0
43392	S	HAZ	1.020	6.5	1+	NG	NG	NG	NG	NG	NG	NG	NG	0.2	31.0

MEAN  
 S.D.  
 N

1.027      6.4  
 0.0189    0.52  
 10            10

mg/dL = MILLIGRAMS/DECILITER,    mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
 2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE

MACRO CODE -  
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PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION),  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: | 1000 MG/KG/DAY | MALES |        |      |   | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL |      |
|--------|--------|----------------|-------|--------|------|---|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
|        |        |                | M     | A      | C    | R |    |     |     |     |     |     |     |     |     |      |      |
|        |        |                | CLOR  | APP    |      |   |    |     |     |     |     |     |     |     |     |      |      |
| 43297  | S      | HAZ            | 1.016 | 6.5    | 1+   |   | NG |     | NG  |     | NG  |     | 1+  |     | NG  | 0.2  | 22.0 |
| 43325  | S      | HAZ            | 1.041 | 5.5    | 2+   |   | NG |     | NG  |     | NG  |     | 1+  |     | NG  | 0.2  | 4.5  |
| 43328  | S      | CLD            | 1.036 | 6.0    | 3+   |   | NG |     | NG  |     | NG  |     | NG  |     | NG  | 0.2  | 8.5  |
| 43346  | S      | HAZ            | 1.080 | 5.5    | 3+   |   | NG |     | NG  |     | NG  |     | NG  |     | NG  | 0.2  | 3.5  |
| 43362  | LS     | HAZ            | 1.012 | 7.0    | 1+   |   | NG |     | NG  |     | NG  |     | NG  |     | NG  | 0.2  | 29.0 |
| 43372  | S      | HAZ            | 1.025 | 6.5    | 1+   |   | NG |     | NG  |     | NG  |     | NG  |     | NG  | 0.2  | 13.0 |
| 43373  | S      | HAZ            | 1.041 | 5.0    | 3+   |   | NG |     | NG  |     | NG  |     | NG  |     | NG  | 0.2  | 5.5  |
| 43377  | S      | CLD            | 1.023 | 6.0    | 2+   |   | NG |     | TR  |     | NG  |     | 3+  |     | TR  | 0.2  | 13.0 |
| 43397  | S      | HAZ            | 1.066 | 5.5    | 3+   |   | NG |     | 1+  |     | NG  |     | NG  |     | NG  | 0.2  | 2.5  |
| MEAN   |        |                |       | 1.038  | 5.9  |   |    |     |     |     |     |     |     |     |     |      |      |
| S.D.   |        |                |       | 0.0227 | 0.63 |   |    |     |     |     |     |     |     |     |     | 0.2  | 11.3 |
| N      |        |                |       | 9      | 9    |   |    |     |     |     |     |     |     |     |     | 0.00 | 9.08 |
|        |        |                |       |        |      |   |    |     |     |     |     |     |     |     |     | 9    | 9    |

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, CLD=CLOUDY, NG=CLOUDY, CLD=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
 2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE

MACRO CODE -

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MEAN  
 S.D.  
 N

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| GROUP: | ANIMAL | FEMALES |           |     |    | SG | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL | mL   |
|--------|--------|---------|-----------|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
|        |        | 0       | MG/KG/DAY | M   | A  | C  | R  | O   | APP |     |     |     |     |     |     |      |      |
| 43433  | S      | HAZ     | 1.019     | 6.0 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 10.0 |
| 43435  | S      | HAZ     | 1.033     | 6.0 | 1+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 3.5  |
| 43436  | S      | HAZ     | 1.036     | 6.0 | 1+ | NG | NG | NG  | NG  | 1+  | NG  | NG  | NG  | NG  | NG  | 0.2  | 5.0  |
| 43438  | S      | HAZ     | 1.026     | 6.0 | TR | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 8.0  |
| 43449  | S      | HAZ     | 1.022     | 5.5 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 9.5  |
| 43467  | S      | HAZ     | 1.023     | 5.5 | TR | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 7.0  |
| 43474  | S      | HAZ     | 1.022     | 6.5 | TR | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 8.0  |
| 43483  | S      | HAZ     | 1.040     | 5.5 | 2+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 3.0  |
| 43497  | S      | HAZ     | 1.050     | 5.5 | 2+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 3.0  |
| 43501  | S      | HAZ     | 1.076     | 5.0 | 3+ | NG | NG | NG  | NG  | 1+  | NG  | NG  | NG  | NG  | NG  | 0.2  | 2.0  |

MEAN  
S.D.

$\text{mg/dL}$  = MILLIGRAMS/DECILITER      mL = MILLILITERS

COLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE,  
 3+=MODERATE TO ABUNDANT, TR=TRACE

889 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 100 MG/KG/DAY |     |       |     | FEMALES |     |    |    |     |     |     |     |     |     |     |     |      |
|--------|----------------------|-----|-------|-----|---------|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|        | M                    | A   | C     | R   | O       | APP | SG | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL |
| 43420  | S                    | HAZ | 1.026 | 5.5 |         | TR  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 8.5  |
| 43439  | S                    | HAZ | 1.033 | 5.5 | 1+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 4.0  |
| 43458  | S                    | HAZ | 1.018 | 6.0 |         | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 8.5  |
| 43462  | S                    | HAZ | 1.044 | 5.0 | 1+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 3.5  |
| 43468  | S                    | HAZ | 1.040 | 5.5 | 1+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 5.5  |
| 43486  | S                    | HAZ | 1.064 | 5.0 | 3+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 3.0  |
| 43489  | S                    | HAZ | 1.031 | 6.0 | 1+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 6.5  |
| 43502  | S                    | HAZ | 1.021 | 6.0 |         | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 10.0 |
| 43511  | S                    | HAZ | 1.062 | 5.0 | 2+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 3.5  |
| 43515  | S                    | HAZ | 1.064 | 5.0 | 3+      | NG  | NG |    |     | NG  |     | NG  |     | NG  | NG  | NG  | 2.5  |

MEAN  
S.D.  
N

1.040  
0.0177  
10

5.5  
0.44  
10

ML = MILLILITERS

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRATE, URO=URIBILINOGEN, S=STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=TRACE TO MODERATE,  
3+=MODERATE TO ABUNDANT, TR=TRACE

MACRO CODE -

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| GROUP: | 300 MG/KG/DAY | FEMALES |       |     |    | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO  | TVOL |       |
|--------|---------------|---------|-------|-----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|-------|
|        |               | M       | A     | C   | R  |    |     |     |     |     |     |     |     |      |      | mg/dL |
| ANIMAL | COLOR         | APP     | SG    |     |    |    |     |     |     |     |     |     |     |      |      | mL    |
| 43463  | S             | HAZ     | 1.026 | 5.0 | 2+ | NG | NG  | NG  | TR  | NG  | NG  | NG  | 0.2 | 5.5  |      |       |
| 43475  | S             | HAZ     | 1.033 | 6.5 | 1+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 5.5  |      |       |
| 43478  | S             | HAZ     | 1.058 | 5.0 | 2+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 5.0  |      |       |
| 43491  | S             | HAZ     | 1.039 | 5.0 | 1+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 4.5  |      |       |
| 43495  | S             | HAZ     | 1.046 | 5.0 | 2+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 4.5  |      |       |
| 43496  | S             | HAZ     | 1.025 | 6.0 | 2+ | NG | NG  | NG  | 1+  | NG  | NG  | NG  | 0.2 | 10.0 |      |       |
| 43508  | S             | HAZ     | 1.028 | 5.5 | 1+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 7.5  |      |       |
| 43513  | S             | HAZ     | 1.045 | 5.5 | 1+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 4.0  |      |       |
| 43516  | S             | HAZ     | 1.015 | 6.0 | 1+ | NG | NG  | NG  | TR  | NG  | NG  | NG  | 0.2 | 18.0 |      |       |
| 43517  | S             | HAZ     | 1.040 | 5.0 | 1+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 4.0  |      |       |

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|        |      |  |
|--------|------|--|
| 1.036  | 5.5  |  |
| 0.0126 | 0.55 |  |
| 10     | 10   |  |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, S=STRAN, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=TRACE TO MODERATE, TR=TRACE

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CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, S=STRAN, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=TRACE TO MODERATE, TR=TRACE

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PROJECT NO.: WIL-1986012  
 SPONSOR: CMA-BFRIP

TABLE 108 (WEEK 13 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
 INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP : 1,000 MG/KG/DAY | FEMALES |       |     |    | SG | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL |  |
|--------|-------------------------|---------|-------|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
|        |                         | M       | A     | C   | R  |    |    |     |     |     |     |     |     |     |     |      |  |
| 43440  | S                       | HAZ     | 1.043 | 5.0 | 1+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 3.5  |  |
| 43456  | S                       | HAZ     | 1.032 | 5.5 | 1+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 8.5  |  |
| 43460  | LS                      | HAZ     | 1.015 | 6.0 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 15.0 |  |
| 43466  | S                       | HAZ     | 1.019 | 6.0 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 15.0 |  |
| 43477  | S                       | HAZ     | 1.037 | 5.0 | 2+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 6.0  |  |
| 43479  | S                       | HAZ     | 1.038 | 5.5 | 3+ | NG | NG | NG  | NG  | NG  | NG  | NG  | 1+  | NG  | 0.2 | 5.0  |  |
| 43481  | S                       | HAZ     | 1.011 | 6.0 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 31.0 |  |
| 43484  | S                       | HAZ     | 1.021 | 6.5 | 2+ | NG | NG | NG  | NG  | NG  | TR  | NG  | NG  | NG  | 0.2 | 9.5  |  |
| 43492  | S                       | HAZ     | 1.080 | 5.0 | 3+ | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 1.5  |  |
| 43503  | LS                      | HAZ     | 1.009 | 7.0 | NG | NG | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 27.0 |  |

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1.031  
 0.0211  
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5.8  
 0.68  
 10

mg/dL = MILLIGRAMS/DECILITER,    mL = MILLILITERS

892 of 1527

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
 2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE

PUV4.02  
 11/17/2000  
 R:07/18/2001

PROJECT NO : WTL-186012  
SPONSOR : CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: | 0 MG/KG/DAY | MALES |     |    |      |    |    |    |     |     |     |    |     |     |                |
|--------|-------------|-------|-----|----|------|----|----|----|-----|-----|-----|----|-----|-----|----------------|
|        |             | WBC   | RBC | M  | I    | C  | R  | O  | EPI | BAC | AMC | HA | TPH | COX | UAC | OTHER |
|        |             | 43332 | NG  | NG | NG   | F  | NG | NG | NG  | NG  | NG  | NG | NG  | NG  | A-SPERM        |
|        |             | 43334 | NG  | NG | NG   | F  | NG | NG | A   | NG  | NG  | NG | NG  | NG  | F-SPERM        |
|        |             | 43336 | NG  | NG | NG   | NG | NG | NG | NG  | F   | NG  | NG | NG  | NG  | A-SPERM        |
|        |             | 43339 | NG  | NG | NG   | M  | NG | NG | NG  | NG  | NG  | NG | NG  | NG  | A-SPERM        |
|        |             | 43349 | NG  | NG | NG   | F  | NG | NG | F   | NG  | NG  | NG | NG  | NG  | F-FECAL CONTAM |
|        |             | 43365 | NG  | NG | 6-10 | NG | R  | NG | NG  | NG  | M   | NG | NG  | NG  |                |
|        |             | 43368 | NG  | NG | NG   | F  | NG | NG | NG  | F   | NG  | NG | NG  | NG  |                |
|        |             | 43369 | 0-2 | NG | NG   | F  | NG | NG | F   | NG  | NG  | NG | NG  | NG  | F-SPERM        |
|        |             | 43379 | 0-1 | NG | NG   | F  | NG | NG | NG  | NG  | NG  | NG | NG  | NG  | F-SPERM        |
|        |             | 43391 | NG  | NG | NG   | F  | NG | NG | F   | NG  | NG  | NG | NG  | NG  | F-SPERM        |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NONE, R=RARE, M=MEDIUM, F=FEW, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | RBC | MALES |    |    |    |    |     | OTHER |     |         |
|--------|-----|-----|-------|----|----|----|----|-----|-------|-----|---------|
|        |     |     | M     | I  | C  | R  | O  | EPI | BAC   | AMC |         |
| 43342  | NG  | NG  | NG    | F  | NG | M  | NG | NG  | NG    | NG  | M-SPERM |
| 43350  | NG  | NG  | NG    | F  | NG | F  | F  | NG  | NG    | NG  | F-SPERM |
| 43351  | NG  | NG  | NG    | F  | F  | NG | NG | NG  | NG    | NG  | F-SPERM |
| 43354  | NG  | NG  | NG    | F  | NG | NG | F  | NG  | NG    | NG  | M-SPERM |
| 43364  | NG  | NG  | NG    | F  | NG | NG | M  | NG  | NG    | NG  | F-SPERM |
| 43371  | 0-  | 2   | 0-    | 2  | NG | NG | NG | NG  | NG    | NG  | F-SPERM |
| 43380  | NG  | NG  | NG    | NG | NG | NG | NG | NG  | NG    | NG  | M-SPERM |
| 43382  | NG  | NG  | NG    | F  | NG | F  | NG | NG  | NG    | NG  | F-SPERM |
| 43384  | NG  | NG  | NG    | F  | NG | M  | NG | NG  | NG    | NG  | F-SPERM |
| 43386  | NG  | NG  | NG    | F  | NG | NG | NG | NG  | NG    | NG  | -       |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HYPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, F=FEW, M=MODERATE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | RBC  | MALES |   |    |     |     |     | OTHER          |
|--------|-----|------|-------|---|----|-----|-----|-----|----------------|
|        |     |      | C     | R | O  | EPI | BAC | AMC |                |
| 43323  | NG  | NG   | NG    | F | NG | NG  | F   | NG  | NG             |
| 43331  | NG  | NG   | NG    | F | NG | A   | NG  | NG  |                |
| 43341  | NG  | NG   | NG    | F | F  | NG  | NG  | NG  |                |
| 43355  | NG  | NG   | NG    | F | NG | NG  | NG  | NG  |                |
| 43361  | NG  | NG   | NG    | M | NG | M   | NG  | NG  | F-SPERM        |
| 43363  | NG  | NG   | NG    | F | NG | M   | NG  | NG  | F-FECAL CONTAM |
| 43383  | NG  | NG   | NG    | F | F  | NG  | NG  | NG  | F-SPERM        |
| 43385  | NG  | 6-10 | NG    | R | NG | NG  | NG  | NG  | F-SPERM        |
| 43388  | NG  | NG   | NG    | F | NG | NG  | NG  | NG  | F-SPERM        |
| 43392  | NG  | NG   | NG    | F | NG | NG  | NG  | NG  | M-SPERM        |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: | 1000 MG/KG/DAY | MALES  |     |     |     |     |    | OTHER |     |         |
|--------|----------------|--------|-----|-----|-----|-----|----|-------|-----|---------|
|        |                | WBC    | RBC | EPI | BAC | AMC | HA | TPH   | COX | UAC     |
|        |                |        |     |     |     |     |    |       |     |         |
| 43297  | NG             | NG     | R   | F   | NG  | F   | NG | NG    | NG  | A-SPERM |
| 43325  | NG             | NG     | NG  | F   | NG  | M   | NG | NG    | NG  | F-SPERM |
| 43328  | NG             | NG     | NG  | F   | NG  | A   | NG | NG    | NG  | A-SPERM |
| 43346  | 0 - 1          | NG     | NG  | NG  | NG  | NG  | NG | NG    | NG  | M-SPERM |
| 43362  | NG             | NG     | NG  | F   | F   | F   | NG | NG    | NG  | F-SPERM |
| 43372  | NG             | NG     | F   | NG  | NG  | F   | NG | NG    | NG  | M-SPERM |
| 43373  | NG             | NG     | NG  | F   | NG  | NG  | NG | NG    | NG  | F-SPERM |
| 43377  | 1 - 5          | 6 - 10 | NG  | M   | NG  | NG  | NG | NG    | NG  | M-SPERM |
| 43397  | NG             | NG     | F   | NG  | NG  | R   | NG | NG    | NG  |         |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP : | 0 MG/KG/DAY | FEMALES |    |   |    |    |     |     |     |
|---------|-------------|---------|----|---|----|----|-----|-----|-----|
|         |             | M       | I  | C | R  | O  | EPI | BAC | AMC |
| ANIMAL  | WBC         | RBC     |    |   |    |    |     |     |     |
| 43433   | 0 - 2       | 0 - 2   | NG | R | NG | NG | NG  | NG  | NG  |
| 43435   | NG          | NG      | NG | R | NG | NG | NG  | NG  | NG  |
| 43436   | NG          | 0 - 1   | NG | M | NG | NG | F   | R   | NG  |
| 43438   | 0 - 1       | NG      | R  | F | NG | NG | NG  | NG  | NG  |
| 43449   | NG          | NG      | NG | R | NG | NG | NG  | NG  | NG  |
| 43467   | NG          | NG      | F  | F | NG | NG | R   | NG  | NG  |
| 43474   | NG          | NG      | NG | F | NG | NG | NG  | NG  | NG  |
| 43483   | NG          | 0 - 2   | NG | F | NG | NG | NG  | NG  | NG  |
| 43497   | NG          | NG      | NG | M | NG | NG | NG  | NG  | NG  |
| 43501   | 0 - 1       | NG      | NG | M | NG | NG | NG  | NG  | NG  |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 100 MG/KG/DAY | FEMALES |     |     |     |     |    |     |     |     |
|--------|----------------------|---------|-----|-----|-----|-----|----|-----|-----|-----|
|        |                      | WBC     | RBC | EPI | BAC | AMC | HA | TPH | COX | UAC |
| 43420  | NG                   | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG  |
| 43439  | 0-2                  | NG      | NG  | NG  | R   | NG  | NG | NG  | NG  | NG  |
| 43458  | NG                   | NG      | NG  | NG  | NG  | NG  | NG | NG  | NG  | NG  |
| 43462  | NG                   | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG  |
| 43468  | NG                   | NG      | NG  | F   | NG  | NG  | NG | F   | NG  | NG  |
| 43486  | NG                   | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG  |
| 43489  | NG                   | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG  |
| 43502  | NG                   | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG  |
| 43511  | 0-3                  | NG      | R   | R   | NG  | NG  | NG | NG  | NG  | NG  |
| 43515  | NG                   | NG      | F   | NG  | NG  | NG  | NG | NG  | NG  | NG  |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NONE, R=RARE, F=FEW

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: | 300 MG/KG/DAY | FEMALES |     |     |     |     |    | OTHER |     |     |
|--------|---------------|---------|-----|-----|-----|-----|----|-------|-----|-----|
|        |               | WBC     | RBC | EPI | BAC | AMC | HA | TPH   | COX | UAC |
| ANIMAL | M             | I       | C   | R   | O   |     |    |       |     |     |
| 43463  | NG            | NG      | NG  | M   | NG  | NG  | NG | NG    | NG  | NG  |
| 43475  | NG            | 10-15   | NG  | F   | NG  | NG  | NG | NG    | NG  | NG  |
| 43478  | NG            | NG      | R   | R   | NG  | NG  | NG | NG    | NG  | NG  |
| 43491  | NG            | NG      | NG  | NG  | NG  | NG  | NG | NG    | NG  | NG  |
| 43495  | NG            | NG      | NG  | F   | NG  | NG  | NG | NG    | NG  | NG  |
| 43496  | NG            | NG      | NG  | A   | NG  | NG  | NG | NG    | NG  | NG  |
| 43508  | NG            | NG      | NG  | F   | NG  | NG  | NG | NG    | NG  | NG  |
| 43513  | NG            | NG      | NG  | F   | NG  | NG  | R  | R     | NG  | NG  |
| 43516  | NG            | NG      | NG  | F   | NG  | NG  | NG | NG    | NG  | NG  |
| 43517  | NG            | NG      | F   | F   | NG  | NG  | NG | NG    | NG  | NG  |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID CRYSTALS, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW, M=MODERATE, A=ABUNDANT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 109 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: | 1000 MG/KG/DAY | FEMALES |     |     |     |     |    |     |     |                  |
|--------|----------------|---------|-----|-----|-----|-----|----|-----|-----|------------------|
|        |                | WBC     | RBC | EPI | BAC | AMC | HA | TPH | COX | UAC              |
| 43440  | NG             | 0 - 2   | NG  | F   | F   | NG  | NG | NG  | NG  | NG               |
| 43456  | NG             | NG      | R   | F   | NG  | NG  | R  | NG  | NG  | NG               |
| 43460  | NG             | NG      | NG  | F   | F   | NG  | NG | NG  | NG  | NG               |
| 43466  | NG             | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG               |
| 43477  | NG             | NG      | NG  | F   | NG  | NG  | NG | NG  | NG  | NG               |
| 43479  | NG             | NG      | NG  | NG  | NG  | NG  | NG | NG  | NG  | NG               |
| 43481  | NG             | NG      | NG  | NG  | NG  | NG  | NG | NG  | NG  | NG               |
| 43484  | NG             | NG      | R   | R   | NG  | NG  | NG | NG  | NG  | NG               |
| 43492  | NG             | NG      | NG  | F   | NG  | F   | NG | NG  | NG  | NG               |
| 43503  | NG             | NG      | F   | NG  | NG  | F   | NG | NG  | NG  | F - FECAL CONTAM |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

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11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 11.0 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| GROUP: | 0 MG/KG/DAY | MALES |        |      |    | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL |    |
|--------|-------------|-------|--------|------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|
|        |             | M     | A      | C    | R  | O  | APP | SG  |     |     |     |     |     |     |      |    |
| ANIMAL | CLOR        |       |        |      |    |    |     |     |     |     |     |     |     |     |      |    |
| 43289  | DS          | HAZ   | 1.076  | 6.0  | 3+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 3.0  | mL |
|        | S           | HAZ   | 1.049  | 6.5  | 2+ | NG | TR  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 5.5  |    |
| 43295  | DS          | HAZ   | 1.041  | 6.0  | 2+ | NG | TR  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 6.0  |    |
| 43308  | S           | HAZ   | 1.040  | 6.5  | 2+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 6.0  |    |
| 43316  | S           | HAZ   | 1.040  | 6.5  | 2+ | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 6.0  |    |
| 43326  | S           | HAZ   | 1.029  | 6.5  | 2+ | NG | TR  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2 | 9.0  |    |
| MEAN   |             |       | 1.047  | 6.3  |    |    |     |     |     |     |     |     |     |     |      |    |
| S.D.   |             |       | 0.0177 | 0.27 |    |    |     |     |     |     |     |     |     |     |      |    |
| N      |             |       | 5      | 5    |    |    |     |     |     |     |     |     |     |     |      |    |

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, DS=DARK STRAW, TR=TRACE  
3+=MODERATE TO ABUNDANT, TR=TRACE  
2+=SLIGHT TO MODERATE,  
1+=NEGATIVE, NG=HAZY

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 100 MG/KG/DAY | MALES |        |      |    |    |    | BIL | BLD | LEU | NIT | URO  | TVOL |
|--------|----------------------|-------|--------|------|----|----|----|-----|-----|-----|-----|------|------|
|        |                      | M     | N      | A    | C  | R  | O  |     |     |     |     |      |      |
| 43285  | S                    | CLD   | 1.068  | 6.0  | 3+ | NG | TR | 1+  | NG  | NG  | P+  | 0.2  | 3.0  |
| 43293  | DS                   | HAZ   | 1.066  | 6.0  | 2+ | NG | TR | NG  | NG  | NG  | P+  | 0.2  | 4.0  |
| 43311  | S                    | HAZ   | 1.032  | 6.5  | 1+ | NG | TR | NG  | NG  | NG  | NG  | 0.2  | 8.5  |
| 43320  | S                    | HAZ   | 1.040  | 6.0  | 2+ | NG | TR | NG  | NG  | NG  | NG  | 0.2  | 8.0  |
| 43340  | S                    | HAZ   | 1.072  | 5.5  | 3+ | NG | NG | 1+  | NG  | NG  | NG  | 0.2  | 3.0  |
| MEAN   |                      |       | 1.056  | 6.0  |    |    |    |     |     |     |     | 0.2  | 5.3  |
| S.D.   |                      |       | 0.0182 | 0.35 |    |    |    |     |     |     |     | 0.00 | 2.73 |
| N      |                      |       | 5      | 5    |    |    |    |     |     |     |     | 5    | 5    |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, DS=DARK STRAW, HAZ=HAZY, CLD=CLOUDY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE, P+=POSITIVE

MACRO CODE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| GROUP : | 300 MG/KG/DAY | MALES |        |      |    |   |     | NIT | URO | TVOL |     |     |     |     |     |       |      |
|---------|---------------|-------|--------|------|----|---|-----|-----|-----|------|-----|-----|-----|-----|-----|-------|------|
|         |               | M     | A      | C    | R  | O | APP | SG  | PH  | PRO  | GLU | KET | BIL | BLD | LEU | mg/dL | mL   |
| ANIMAL  |               |       |        |      |    |   |     |     |     |      |     |     |     |     |     |       |      |
| 43290   | S             | HAZ   | 1.044  | 6.0  | 2+ |   |     | NG  |     | TR   | NG  | NG  | NG  | NG  | NG  | 0.2   | 5.0  |
| 43307   | S             | HAZ   | 1.044  | 6.5  | 2+ |   |     | NG  |     | TR   | NG  | NG  | NG  | NG  | NG  | 0.2   | 6.0  |
| 43309   | S             | HAZ   | 1.028  | 6.5  | 1+ |   |     | NG  |     | TR   | NG  | NG  | NG  | NG  | NG  | 0.2   | 11.0 |
| 43318   | DS            | HAZ   | 1.094  | 5.5  | 3+ |   |     | NG  |     | TR   | NG  | NG  | NG  | NG  | NG  | P+    | 1.0  |
| 43322   | DS            | CLD   | 1.078  | 5.5  | 3+ |   |     | NG  |     | NG   | NG  | NG  | NG  | NG  | NG  | P+    | 2.5  |
| MEAN    |               |       | 1.058  | 6.0  |    |   |     |     |     |      |     |     |     |     |     |       |      |
| S.D.    |               |       | 0.0273 | 0.50 |    |   |     |     |     |      |     |     |     |     |     | 0.44  | 3.39 |
| N       |               |       | 5      | 5    |    |   |     |     |     |      |     |     |     |     |     | 5     | 5    |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLO=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOPEN, S=STRAW, DS=DARK STRAW, HAZ=HAZY, CLD=CLOUDY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE, P+=POSITIVE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| GROUP: | 1000 MG/KG/DAY | MALES |        |      |    |   |     | BIL | BLD | LEU | NIT | URO | TVOL |       |       |
|--------|----------------|-------|--------|------|----|---|-----|-----|-----|-----|-----|-----|------|-------|-------|
|        |                | M     | A      | C    | R  | O | APP |     |     |     |     |     |      | mg/dL | mL    |
| ANIMAL |                |       |        |      |    |   |     |     |     |     |     |     |      |       |       |
| 43277  | S              | HAZ   | 1.035  | 6.0  | 2+ |   | NG | NG | NG | NG | NG | NG | NG | 0.2   | 5.0   |
| 43278  | LS             | HAZ   | 1.008  | 6.0  |    |   | NG  | TR  | NG  | NG  | NG  | NG  | NG   | 0.2   | 32.0  |
| 43280  | S              | HAZ   | 1.018  | 6.5  | 1+ |   | NG  | TR  | NG  | TR  | NG  | NG  | NG   | 0.2   | 23.0  |
| 43281  | S              | CLD   | 1.064  | 5.5  | 3+ |   | NG  | NG  | TR  | NG  | NG  | NG  | NG   | 0.2   | 4.5   |
| 43282  | S              | HAZ   | 1.037  | 6.5  | 1+ |   | NG  | TR  | NG  | NG  | NG  | NG  | NG   | 0.2   | 7.0   |
| MEAN   |                |       | 1.032  | 6.1  |    |   |     |     |     |     |     |     |      |       |       |
| S.D.   |                |       | 0.0214 | 0.42 |    |   |     |     |     |     |     |     |      | 0.2   | 14.3  |
| N      |                |       | 5      | 5    |    |   |     |     |     |     |     |     |      | 0.00  | 12.50 |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

MACRO CODE -  
COLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, CLD=CLOUDY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, 3+=MODERATE TO ABUNDANT, TR=TRACE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: | 0 MG/KG/DAY | FEMALES |      |    |   | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO  | TVOL  |
|--------|--------|-------------|---------|------|----|---|----|-----|-----|-----|-----|-----|-----|-----|------|-------|
|        |        |             | M       | A    | C  | R |    |     |     |     |     |     |     |     |      |       |
| 43398  | S      | HAZ         | 1.041   | 5.0  | 1+ |   | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 3.0   |
| 43405  | LS     | HAZ         | 1.007   | 5.0  | NG |   | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 30.0  |
| 43409  | S      | HAZ         | 1.074   | 5.0  | 2+ |   | NG | NG  | NG  | NG  | NG  | NG  | NG  | P+  | 0.2  | 1.5   |
| 43423  | S      | HAZ         | 1.035   | 5.5  | 1+ |   | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 5.0   |
| 43432  | S      | HAZ         | 1.040   | 5.5  | 1+ |   | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 4.5   |
| MEAN   |        |             | 1.039   | 5.2  |    |   |    |     |     |     |     |     |     |     | 0.2  | 8.8   |
| S.D.   |        |             | 0.0238  | 0.27 |    |   |    |     |     |     |     |     |     |     | 0.00 | 11.93 |
| N      |        |             | 5       | 5    |    |   |    |     |     |     |     |     |     |     | 5    | 5     |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=UROBILINOGEN, S=STRAW, LS=LIGHT STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, P+=POSITIVE

MACRO CODE -

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 100 MG/KG/DAY |   |     | FEMALES |      |     | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO | TVOL |
|--------|----------------------|---|-----|---------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|        | M                    | A | C   | R       | O    | APP | SG  | PH  |     |     |     |     |     |     |      |
| 43400  | S                    |   | HAZ | 1.024   | 6.0  | NG  | NG  |     | NG  | NG  | NG  | NG  | NG  | 0.2 | 6.0  |
| 43407  | DS                   |   | HAZ | 1.064   | 5.0  | 2+  | NG  |     | NG  | NG  | NG  | NG  | NG  | P+  | 0.2  |
| 43413  | S                    |   | HAZ | 1.029   | 6.0  | TR  | NG  |     | NG  | NG  | NG  | NG  | NG  | 0.2 | 2.5  |
| 43416  | S                    |   | HAZ | 1.031   | 6.0  | 1+  | NG  |     | NG  | NG  | NG  | NG  | NG  | 0.2 | 5.0  |
| 43419  | S                    |   | CLD | 1.036   | 6.0  | 1+  | NG  |     | NG  | NG  | TR  | NG  | NG  | 0.2 | 4.5  |
|        | MEAN                 |   |     | 1.037   | 5.8  |     |     |     |     |     |     |     |     | P+  | 0.2  |
|        | S.D.                 |   |     | 0.0158  | 0.45 |     |     |     |     |     |     |     |     |     | 4.6  |
|        | N                    |   |     | 5       | 5    |     |     |     |     |     |     |     |     |     | 0.00 |

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

MEAN  
S.D.  
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906 of 1527

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URORIBILINOGEN, S=STRAW, DS=DARK STRAW, HAZ=HAZY, CLD=CLOUDY, NG=NEGATIVE, 1+=TRACE TO SLIGHT,  
2+=SLIGHT TO MODERATE, TR=MEDIUM, P+=POSITIVE

MACRO CODE -

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PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 300 MG/KG/DAY |     |        |      | FEMALES |     |    |    |     |     |     |     |     |     |      |      |      |
|--------|----------------------|-----|--------|------|---------|-----|----|----|-----|-----|-----|-----|-----|-----|------|------|------|
|        | M                    | A   | C      | R    | O       | APP | SG | PH | PRO | GLU | KET | BIL | BLD | LEU | NIT  | URO  | TVOL |
| 43402  | S                    | HAZ | 1.017  | 5.5  | 2+      |     | NG |    |     | NG  |     | 3+  |     | TR  | NG   | 0.2  | 14.0 |
| 43426  | S                    | HAZ | 1.036  | 6.0  | 1+      |     | NG |    |     | NG  |     | 1+  |     | NG  | P+   | 0.2  | 4.5  |
| 43442  | DS                   | HAZ | 1.086  | 5.5  | 3+      |     | NG |    |     | NG  |     | 1+  |     | NG  | P+   | 1.0  | 2.0  |
| 43446  | S                    | HAZ | 1.047  | 6.0  | 1+      |     | NG |    |     | NG  |     | NG  |     | NG  | NG   | 0.2  | 3.5  |
| 43461  | S                    | HAZ | 1.043  | 5.5  | 1+      |     | NG |    |     | NG  |     | 1+  |     | NG  | P+   | 0.2  | 3.5  |
| MEAN   |                      |     | 1.046  | 5.7  |         |     |    |    |     |     |     |     |     |     | 0.4  | 5.5  |      |
| S.D.   |                      |     | 0.0253 | 0.27 |         |     |    |    |     |     |     |     |     |     | 0.36 | 4.83 |      |
| N      |                      |     | 5      | 5    |         |     |    |    |     |     |     |     |     |     | 5    | 5    |      |

mg/dL = MILLIGRAMS/DECILITER, mL = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET-KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, DS=DARK STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE,  
3+=MODERATE TO ABUNDANT, TR=TRACE, P+=POSITIVE

MACRO CODE -

PAGE 7

WEEK 17

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

TABLE 110 (WEEK 17 RECOVERY EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL MACROSCOPIC URINALYSIS VALUES

| ANIMAL | GROUP: 1.000 MG/KG/DAY |     |        | FEMALES |    |     | PRO | GLU | KET | BIL | BLD | LEU | NIT | URO  | TVOL |    |
|--------|------------------------|-----|--------|---------|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|----|
|        | M                      | A   | C      | R       | O  | APP | SG  | PH  |     |     |     |     |     |      |      |    |
| 43401  | S                      | HAZ | 1.036  | 5.5     | 1+ | NG | NG | NG | NG | NG | NG | NG | NG | 0.2  | 5.0  | mL |
| 43410  | S                      | HAZ | 1.022  | 6.0     | NG | NG  | NG  | NG  | NG  | NG  | NG  | NG  | NG  | 0.2  | 7.5  | mL |
| 43421  | S                      | HAZ | 1.070  | 5.0     | 2+ | NG  | NG  | NG  | NG  | 2+  | NG  | NG  | NG  | 0.2  | 2.0  | mL |
| 43429  | S                      | HAZ | 1.064  | 5.0     | 3+ | NG | NG | NG | NG | NG | NG | NG | NG | 0.2  | 3.5  | mL |
| 43430  | S                      | HAZ | 1.043  | 5.5     | 1+ | NG | NG | NG | NG | NG | NG | NG | NG | 0.2  | 5.0  | mL |
| MEAN   |                        |     | 1.047  | 5.4     |    |     |     |     |     |     |     |     |     | 0.2  | 4.6  |    |
| S.D.   |                        |     | 0.0199 | 0.42    |    |     |     |     |     |     |     |     |     | 0.00 | 2.04 |    |
| N      |                        |     | 5      | 5       |    |     |     |     |     |     |     |     |     | 5    | 5    |    |

mg/dL = MILLIGRAMS/DECILITER, ml = MILLILITERS

CLOR=COLOR, APP=APPEARANCE, SG=SPECIFIC GRAVITY, PRO=PROTEIN, GLU=GLUCOSE, KET=KETONE, BIL=BILIRUBIN, BLD=BLOOD,  
 NIT=NITRITE, URO=URIBILINOGEN, S=STRAW, HAZ=HAZY, NG=NEGATIVE, 1+=TRACE TO SLIGHT, 2+=SLIGHT TO MODERATE,  
 3+=MODERATE TO ABUNDANT

PUV4.02  
 11/17/2000  
 R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 1111 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | RBC  | MALES |    |    |    |    |     | OTHER    |
|--------|-----|------|-------|----|----|----|----|-----|----------|
|        |     |      | M     | I  | C  | R  | O  | EPI |          |
| 43289  | NG  | 6-10 | NG    | R  | NG | F  | NG | NG  | F-MUCOUS |
| 43295  | NG  | NG   | NG    | R  | NG | NG | F  | NG  | F-SPERM  |
| 43308  | NG  | NG   | NG    | NG | R  | NG | NG | NG  | R-MUCOUS |
| 43316  | NG  | NG   | NG    | NG | R  | NG | R  | NG  | R-SPERM  |
| 43326  | NG  | NG   | NG    | R  | NG | NG | R  | NG  | R-MUCOUS |
|        |     |      |       |    |    |    |    |     | R-SPERM  |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 111 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | MALES |     |     |     |    |     | OTHER |     |          |
|--------|-----|-------|-----|-----|-----|----|-----|-------|-----|----------|
|        |     | RBC   | EPI | BAC | AMC | HA | TPH | COX   | UAC |          |
| 43285  | NG  | 1- 5  | NG  | R   | NG  | F  | NG  | NG    | NG  | R-MUCOUS |
| 43293  | NG  | 0- 2  | NG  | R   | R   | NG | NG  | NG    | NG  |          |
| 43311  | NG  | NG    | NG  | R   | R   | NG | F   | NG    | NG  |          |
| 43320  | NG  | 0- 2  | NG  | R   | NG  | NG | NG  | NG    | NG  | R-MUCOUS |
| 43340  | NG  | NG    | NG  | R   | NG  | NG | NG  | NG    | NG  | F-SPERM  |
|        |     |       |     |     |     |    |     |       |     | R-MUCOUS |
|        |     |       |     |     |     |    |     |       |     | F-SPERM  |
|        |     |       |     |     |     |    |     |       |     |          |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 1111 (WEEK 1.7 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: 300 MG/KG/DAY |     | MALES |     |     |    |     |       |     |
|----------------------|-----|-------|-----|-----|----|-----|-------|-----|
| ANIMAL               | WBC | M     | I   | C   | R  | O   | OTHER |     |
|                      | RBC | EPI   | BAC | AMC | HA | TPH | COX   | UAC |
| 43290                | NG  | NG    | R   | R   | NG | R   | NG    | NG  |
| 43307                | NG  | 6-10  | NG  | R   | NG | F   | NG    | NG  |
| 43309                | NG  | NG    | NG  | R   | NG | NG  | NG    | NG  |
| 43318                | 0-2 | 0-2   | NG  | R   | NG | NG  | NG    | NG  |
| 43322                | NG  | NG    | F   | NG  | NG | R   | NG    | NG  |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HYPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

PAGE 3  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 111 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | RBC   | MALES |    |    |    |    |     | OTHER |     |     |                     |
|--------|-----|-------|-------|----|----|----|----|-----|-------|-----|-----|---------------------|
|        |     |       | M     | I  | C  | R  | O  | AMC | HA    | TPH | COX | UAC                 |
| 43277  | NG  | 0 - 2 | R     | R  | NG | NG | NG | NG  | NG    | NG  | NG  | R-MUCOUS<br>R-SPERM |
| 43278  | NG  | NG    | NG    | NG | R  | NG | NG | NG  | NG    | NG  | NG  | R-MUCOUS<br>R-SPERM |
| 43280  | NG  | NG    | NG    | NG | R  | R  | NG | NG  | NG    | NG  | NG  | R-MUCOUS            |
| 43281  | NG  | NG    | NG    | NG | R  | NG | NG | NG  | NG    | NG  | NG  | R-MUCOUS<br>R-SPERM |
| 43282  | NG  | NG    | NG    | NG | R  | NG | NG | R   | NG    | NG  | NG  | R-MUCOUS            |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE, F=FEW

PAGE 4  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 111 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP : | 0 MG/KG/DAY | FEMALES |    |    |    |    |     | OTHER |     |    |     |     |     |          |
|---------|-------------|---------|----|----|----|----|-----|-------|-----|----|-----|-----|-----|----------|
|         |             | M       | I  | C  | R  | O  | EPI | BAC   | AMC | HA | TPH | COX | UAC |          |
| ANIMAL  | WBC         | RBC     |    |    |    |    |     |       |     |    |     |     |     |          |
| 43398   | NG          | NG      | NG | R  | NG | NG | NG  | NG    | NG  | NG | NG  | NG  | NG  | R-MUCOUS |
| 43405   | NG          | NG      | NG | NG | R  | NG | NG  | NG    | NG  | NG | NG  | NG  | NG  |          |
| 43409   | NG          | NG      | NG | NG | R  | R  | NG  | NG    | NG  | NG | NG  | NG  | NG  |          |
| 43423   | NG          | NG      | NG | R  | NG | NG | NG  | NG    | NG  | NG | NG  | NG  | NG  |          |
| 43432   | 0- 2        | NG      | NG | R  | NG | NG | NG  | NG    | NG  | NG | NG  | NG  | NG  |          |

----- MICRO CODE -----  
EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 1111 (WEEK 1.7 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| GROUP: | 100 MG/KG/DAY | FEMALES |     |     |     |    |       |     |     |          |
|--------|---------------|---------|-----|-----|-----|----|-------|-----|-----|----------|
|        |               | M       | I   | C   | R   | O  | OTHER |     |     |          |
| ANIMAL | WBC           | RBC     | EPI | BAC | AMC | HA | TPH   | COX | UAC | OTHER    |
| 43400  | NG            | NG      | NG  | R   | NG  | NG | NG    | NG  | NG  | R-MUCOUS |
| 43407  | NG            | NG      | NG  | R   | NG  | NG | NG    | NG  | NG  | R-MUCOUS |
| 43413  | NG            | NG      | NG  | R   | R   | NG | NG    | NG  | NG  | R-MUCOUS |
| 43416  | 0 - 2         | NG      | NG  | R   | R   | NG | NG    | NG  | NG  | R-MUCOUS |
| 43419  | NG            | NG      | R   | NG  | NG  | NG | NG    | NG  | NG  | R-MUCOUS |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 111 (WEEK 1-7 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | RBC   | FEMALES |   |    |    |    |     | OTHER    |
|--------|-----|-------|---------|---|----|----|----|-----|----------|
|        |     |       | M       | I | C  | R  | O  | EPI |          |
| 43402  | NG  | 11-25 | NG      | R | NG | NG | NG | NG  | R-MUCOUS |
| 43426  | NG  | NG    | NG      | R | NG | NG | NG | NG  | R-MUCOUS |
| 43442  | NG  | NG    | NG      | R | NG | NG | R  | NG  | R-MUCOUS |
| 43446  | NG  | NG    | NG      | R | NG | NG | NG | NG  | R-MUCOUS |
| 43461  | NG  | NG    | NG      | R | NG | NG | NG | NG  | R-MUCOUS |

----- MICRO CODE -----  
EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HYPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 111 (WEEK 1.7 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MICROSCOPIC URINALYSIS VALUES

| ANIMAL | WBC | FEMALES |   |    |    |    |     | OTHER    |
|--------|-----|---------|---|----|----|----|-----|----------|
|        |     | M       | I | C  | R  | O  | UAC |          |
| 43401  | NG  | NG      | R | NG | NG | NG | NG  |          |
| 43410  | NG  | NG      | R | NG | NG | NG | NG  |          |
| 43421  | NG  | NG      | R | R  | NG | NG | NG  | R-MUCOUS |
| 43429  | NG  | NG      | R | R  | NG | NG | NG  | R-MUCOUS |
| 43430  | NG  | NG      | R | NG | NG | NG | NG  | R-MUCOUS |

EPI=EPITHELIAL, BAC=BACTERIA, AMC=AMORPHOUS CRYSTALS, HA=HIPPURIC ACID, TPH=TRIPLE PHOSPHATES, COX=CALCIUM OXALATE,  
UAC=URIC ACID CRYSTALS, NG=NEGATIVE, R=RARE

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PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
TABLE 11.2 (WEEK 3 EVALUATION)  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL              | TSH | TOTAL |    | TOTAL |       |
|---------------------|-----|-------|----|-------|-------|
|                     |     | T3    | T4 | ng/ml | ng/dL |
| GROUP : 0 MG/KG/DAY |     |       |    |       |       |
|                     |     |       |    | MALES |       |
| 43365               | 0   | 0.67  |    | 57.30 | 6.10  |
| 43368               |     | 1.60  |    | 72.70 | 12.00 |
| 43369               |     |       |    | 77.60 | 7.90  |
| 43379               |     | 3.99  |    | 66.70 | 6.90  |
| 43391               |     | 1.37  |    | 77.10 | 6.30  |
| MEAN                |     | 1.91  |    | 70.28 | 7.84  |
| S.D.                |     | 1.44  |    | 8.47  | 2.429 |
| N                   |     | 4     |    | 5     | 5     |

**IVB = BELOW INSTRUMENT RANGE**

$\mu\text{g}/\text{dL} = \text{MICROGRAMS/DECILITER}$

[ $\text{Dg/mL}$ ] = NANOGRAMS/MILLILITER    [ $\text{ng/dL}$ ] = NANOCBAMS/DECILITER

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

**TABLE 112 (WEEK 3 EVALUATION)**  
**A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS**  
**INDIVIDUAL SERUM HORMONE VALUES**

| ANIMAL                                         | TSH | TOTAL |        | TOTAL |       |
|------------------------------------------------|-----|-------|--------|-------|-------|
|                                                |     | T3    | T4     | T3    | T4    |
|                                                |     | ng/ml | ng/dL  | ug/dL | ug/dL |
| GROUP: 100 MG/KG/DAY                           |     |       |        |       |       |
|                                                |     |       |        | MALES |       |
| 43371                                          |     | 12.17 | 74.30  | 7.80  |       |
| 43380                                          |     | 2.59  | 123.00 | 9.30  |       |
| 43382                                          |     | 3.09  | 79.90  | 6.80  |       |
| 43384                                          |     | 3.29  | 72.20  | 6.50  |       |
| 43386                                          |     | 1.50  | 102.00 | 6.70  |       |
| MEAN                                           |     | 4.53  | 90.28  | 7.42  |       |
| S.D.                                           |     | 4.328 | 21.783 | 1.165 |       |
| N                                              |     | 5     | 5      | 5     | 5     |
| $\mu\text{g/dL} = \text{MICROGRAMS/DECILITER}$ |     |       |        |       |       |
| $\text{ng/ml} = \text{NANOGRAMS/MILLILITER}$   |     |       |        |       |       |
| $\text{ng/dL} = \text{NANOGRAMS/MILLILITER}$   |     |       |        |       |       |
| $\mu\text{g/dL} = \text{NANOGRAMS/MILLILITER}$ |     |       |        |       |       |

918 of 1527

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH           | TOTAL          |       | TOTAL<br>T <sub>4</sub> |  |
|--------|---------------|----------------|-------|-------------------------|--|
|        |               | T <sub>3</sub> | ng/ml |                         |  |
| GROUP: | 300 MG/KG/DAY | ng/dL          |       | ug/dL                   |  |
| 43363  |               | UR             | 50.10 | 5.20                    |  |
| 43383  |               | UR             | 89.50 | 8.80                    |  |
| 43385  | 3.07          | 68.10          | 8.00  |                         |  |
| 43388  | 3.76          | 61.40          | 7.90  |                         |  |
| 43392  | 5.68          | 57.90          | 5.20  |                         |  |
| MEAN   | 4.17          | 65.40          | 7.02  |                         |  |
| S.D.   | 1.352         | 14.954         | 1.698 |                         |  |
| N      | 3             | 5              | 5     |                         |  |

UR = BELOW INSTRUMENT RANGE

ng/ml = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                 | TSH | TOTAL          |                | TOTAL  |       |
|------------------------|-----|----------------|----------------|--------|-------|
|                        |     | T <sub>3</sub> | T <sub>4</sub> | ng/ml  | ng/dL |
| GROUP : 1000 MG/KG/DAY |     |                |                |        |       |
|                        |     |                |                | MALES  |       |
| 43362                  |     | 1.84           |                | 56.50  | 6.30  |
| 43372                  |     | 4.90           |                | 97.00  | 6.30  |
| 43373                  |     | 0.86           |                | 78.00  | 6.60  |
| 43377                  |     | 1.71           |                | 62.00  | 8.10  |
| 43397                  |     | 4.96           |                | 82.30  | 4.30  |
| MEAN                   |     | 2.85           |                | 75.16  | 6.32  |
| S.D.                   |     | 1.932          |                | 16.259 | 1.354 |
| N                      |     | 5              |                | 5      | 5     |

**ug/dL** = MICROGRAMS / DECILITER,      **ng/mL** = NANOGRAMS / MILLILITER,      **n9/dL** = NANOGRAMS / DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH         | TOTAL  |                | TOTAL<br>T <sub>4</sub> | PAGE<br>5<br>WEEK<br>3 |
|--------|-------------|--------|----------------|-------------------------|------------------------|
|        |             | T3     | T <sub>4</sub> |                         |                        |
| GROUP: | 0 MG/KG/DAY | ng/ml  | ng/dL          | ug/dL                   |                        |
| 43467  | UR          | 92.70  | 7.90           |                         |                        |
| 43474  | UR          | 77.50  | 5.50           |                         |                        |
| 43483  | 1.08        | 78.40  | 6.00           |                         |                        |
| 43497  | UR          | 53.10  | 4.40           |                         |                        |
| 43501  | UR          | 79.70  | QNS            |                         |                        |
| MEAN   | 1.08        | 76.28  | 5.95           |                         |                        |
| S.D.   | 0.000       | 14.358 | 1.462          |                         |                        |
| N      | 1           | 5      | 4              |                         |                        |

QNS = QUANTITY NOT SUFFICIENT, UR = BELOW INSTRUMENT RANGE

ug/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH           | TOTAL          |       | TOTAL<br>T <sub>4</sub> | PAGE<br>6<br>3 |
|--------|---------------|----------------|-------|-------------------------|----------------|
|        |               | T <sub>3</sub> | ng/ml |                         |                |
| GROUP: | 100 MG/KG/DAY | FEMALES        |       |                         |                |
| 43486  | 0.84          | 59.90          | 6.60  |                         |                |
| 43489  | UR            | 58.30          | 6.70  |                         |                |
| 43502  | 1.89          | 77.60          | 6.60  |                         |                |
| 43511  | 1.19          | 75.80          | 6.50  |                         |                |
| 43515  | UR            | 85.40          | 3.90  |                         |                |
| MEAN   | 1.31          | 71.40          | 6.06  |                         |                |
| S.D.   | 0.535         | 11.807         | 1.210 |                         |                |
| N      | 3             | 5              | 5     |                         |                |

UR = BELOW INSTRUMENT RANGE

uG/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO. : WIL-186012  
SPONSOR : CMA - BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL SERUM HORMONE VAULTES

| ANIMAL                | TSH            |                | TOTAL |       | TOTAL<br>T <sub>4</sub> |
|-----------------------|----------------|----------------|-------|-------|-------------------------|
|                       | T <sub>3</sub> | T <sub>4</sub> | ng/ml | ng/dL |                         |
| GROUP : 300 MG/KG/DAY |                |                |       |       |                         |
|                       |                |                |       |       | FEMALES                 |
| 43496                 | 5.62           |                | 75.20 |       | 6.80                    |
| 43508                 |                | UR             | 72.60 |       | 7.30                    |
| 43513                 | 0.63           |                | 82.30 |       | 5.70                    |
| 43516                 | 0.84           |                | 82.70 |       | 4.80                    |
| 43517                 | 0.37           |                | 73.40 |       | 4.20                    |
| MEAN                  | 1.87           |                | 77.24 |       | 5.76                    |
| S.D.                  | 2.511          |                | 4.895 |       | 1.305                   |
| N                     | 4              |                | 5     |       | 5                       |

LFB = BELOW INSTRUMENT RANGE

$$\mu\text{g/dL} = \text{MICROGRAMS/DECILITER}$$

$\text{Dg/m}^2 = \text{NANOGRAMS/MILLILITER}$   $\text{ng/dL} = \text{NANOCOMICS/DECILITER}$

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 112 (WEEK 3 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                | TSH     | TOTAL  |       | TOTAL |       |
|-----------------------|---------|--------|-------|-------|-------|
|                       |         | T3     | T4    | T3    | T4    |
|                       |         | ng/ml  | ng/dL | ug/dL | ug/dL |
| GROUP: 1000 MG/KG/DAY | FEMALES |        |       |       |       |
| 43479                 |         | 2.31   | 94.60 | 5.70  |       |
| 43481                 | UR      | 67.60  | 5.00  |       |       |
| 43484                 | 1.65    | 69.30  | 4.60  |       |       |
| 43492                 | 1.57    | 88.70  | 6.50  |       |       |
| 43503                 | 1.78    | 84.50  | 6.30  |       |       |
| MEAN                  | 1.83    | 80.94  | 5.62  |       |       |
| S.D.                  | 0.333   | 11.968 | 0.817 |       |       |
| N                     | 4       | 5      | 5     |       |       |

UR = BELOW INSTRUMENT RANGE

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

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R:07/18/2001

PROJECT NO.: WTL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH   | TOTAL |       | TOTAL |       |
|--------|-------|-------|-------|-------|-------|
|        |       | T3    | T4    | T3    | T4    |
|        |       | ng/ml | ug/dL | ng/ml | ug/dL |
| 43332  | UR    | 76.40 | 7.10  |       |       |
| 43334  | 0.98  | 70.00 | 6.60  |       |       |
| 43336  | 0.10  | 67.50 | 7.80  |       |       |
| 43339  | UR    | 63.40 | 7.10  |       |       |
| 43349  | UR    | 41.50 | 6.60  |       |       |
| 43365  | 0.86  | 60.90 | 6.80  |       |       |
| 43368  | UR    | 61.80 | 9.60  |       |       |
| 43369  | 0.18  | 73.40 | 9.70  |       |       |
| 43379  | 0.20  | 66.70 | 8.40  |       |       |
| 43391  | UR    | 62.00 | 9.00  |       |       |
| MEAN   | 0.46  | 64.36 | 7.87  |       |       |
| S.D.   | 0.420 | 9.553 | 1.223 |       |       |
| N      | 5     | 10    | 10    |       |       |

UR = BELOW INSTRUMENT RANGE

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL               | TSH   | TOTAL          |                | TOTAL |       |
|----------------------|-------|----------------|----------------|-------|-------|
|                      |       | T <sub>3</sub> | T <sub>4</sub> | ng/ml | ng/dL |
| GROUP: 100 MG/KG/DAY |       |                |                |       |       |
|                      |       | MALES          |                |       |       |
| 43342                | UR    | 4.8            | 5.0            | 4.00  |       |
| 43350                | 2.66  | 44.40          | 6.80           |       |       |
| 43351                | 0.37  | 72.80          | 6.50           |       |       |
| 43354                | 3.84  | 68.20          | 5.30           |       |       |
| 43364                | 11.91 | 68.70          | 6.00           |       |       |
| 43371                | 4.86  | 53.50          | 6.80           |       |       |
| 43380                | 1.67  | 74.10          | 6.70           |       |       |
| 43382                | 0.38  | 42.40          | 6.00           |       |       |
| 43384                | 0.61  | 45.50          | 8.80           |       |       |
| 43386                | UR    | 69.70          | 6.50           |       |       |
| MEAN                 | 3.29  | 58.78          | 6.34           |       |       |
| S.D.                 | 3.859 | 13.007         | 1.222          |       |       |
| N                    | 8     | 10             | 10             |       |       |

UR = BELOW INSTRUMENT RANGE

μg/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                      | TSH                   | TOTAL        |                       | TOTAL |                     |  |
|-----------------------------|-----------------------|--------------|-----------------------|-------|---------------------|--|
|                             |                       | T3           | T4                    |       |                     |  |
|                             |                       |              |                       | ng/ml | ug/dL               |  |
| <b>GROUP: 300 MG/KG/DAY</b> |                       |              |                       |       |                     |  |
|                             |                       | <b>MALES</b> |                       |       |                     |  |
| 43323                       | 4.59                  | 59.30        | 7.30                  |       |                     |  |
| 43331                       | 4.12                  | 86.30        | 7.90                  |       |                     |  |
| 43341                       | 3.20                  | 46.00        | 5.90                  |       |                     |  |
| 43355                       | 0.49                  | 59.70        | 6.50                  |       |                     |  |
| 43361                       | 5.95                  | 74.40        | 6.90                  |       |                     |  |
| 43363                       | 1.49                  | 55.40        | 5.00                  |       |                     |  |
| 43383                       | 0.32                  | 40.90        | 5.80                  |       |                     |  |
| 43385                       | 1.11                  | 61.00        | 5.90                  |       |                     |  |
| 43388                       | 0.52                  | 53.20        | 7.00                  |       |                     |  |
| 43392                       | 4.69                  | 53.40        | 4.60                  |       |                     |  |
| MEAN                        | 2.65                  | 58.96        | 6.28                  |       |                     |  |
| S.D.                        | 2.098                 | 13.172       | 1.033                 |       |                     |  |
| N                           | 10                    | 10           | 10                    |       |                     |  |
| ug/dL                       | MICROGRAMS/DECILITER, | ng/ml        | NANOGRAMS/MILLILITER, | ng/ml | NANOGRAMS/DECILITER |  |

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOCGRAMS/DECILITER

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                | TSH | TOTAL |    | TOTAL |       |
|-----------------------|-----|-------|----|-------|-------|
|                       |     | T3    | T4 | ng/ml | ng/dL |
| GROUP: 1000 MG/KG/DAY |     |       |    |       |       |
|                       |     |       |    | MALES |       |
| 43297                 | 4   | 4.47  |    | 67.60 | 4.30  |
| 43325                 |     | 1.58  |    | 54.40 | 5.20  |
| 43328                 |     | 6.93  |    | 48.60 | 4.30  |
| 43346                 |     | 1.17  |    | 62.10 | 5.00  |
| 43362                 |     | 3.69  |    | 69.30 | 4.50  |
| 43372                 |     | 8.62  |    | 59.40 | 5.80  |
| 43373                 |     | 1.15  |    | 75.50 | 6.50  |
| 43377                 |     | 0.61  |    | 63.00 | 4.60  |
| 43397                 |     | 6.74  |    | 78.20 | 4.50  |
| MEAN                  |     | 3.88  |    | 64.23 | 4.97  |
| S.D.                  |     | 2.981 |    | 9.549 | 0.755 |
| N                     |     | 9     |    | 9     | 9     |

**μg/dL = MICROGRAMS/DECILITER,      nq/ml = NANOGRAMS/MILLILITER,      nq/dL = NANOGRAMS/DECILITER**

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL             | TSH     | TOTAL  |       | TOTAL |       |
|--------------------|---------|--------|-------|-------|-------|
|                    |         | T3     | T4    | ng/ml | ug/dL |
| GROUP: 0 MG/KG/DAY | FEMALES |        |       |       |       |
| 43433              | 0.85    | 107.00 | 5.80  |       |       |
| 43435              | UR      | 66.80  | 5.40  |       |       |
| 43436              | UR      | 64.10  | 6.20  |       |       |
| 43438              | 0.73    | 65.20  | 6.60  |       |       |
| 43449              | 0.34    | 88.90  | 4.60  |       |       |
| 43467              | 0.21    | 69.40  | 5.30  |       |       |
| 43474              | 0.17    | 60.40  | 4.70  |       |       |
| 43483              | UR      | 82.90  | 5.00  |       |       |
| 43497              | UR      | 61.40  | 6.60  |       |       |
| 43501              | UR      | 67.90  | 4.10  |       |       |
| MEAN               | 0.46    | 73.40  | 5.43  |       |       |
| S.D.               | 0.311   | 14.967 | 0.860 |       |       |
| N                  | 5       | 10     | 10    |       |       |

UR = BELOW INSTRUMENT RANGE

uG/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| GROUP: | 100 MG/RG/DAY | FEMALES | TOTAL |       | TOTAL |       |
|--------|---------------|---------|-------|-------|-------|-------|
|        |               |         | TSH   | T3    | T3    | T4    |
|        |               |         | ng/ml | ng/dL | ug/dL | ug/dL |
| 43420  | 0.48          | 72.70   | 5.00  |       |       |       |
| 43439  | UR            | 74.90   | 5.10  |       |       |       |
| 43458  | UR            | 103.00  | 4.80  |       |       |       |
| 43462  | 0.90          | 104.00  | 5.90  |       |       |       |
| 43468  | 1.05          | 67.60   | 5.10  |       |       |       |
| 43486  | 2.63          | 59.50   | 5.20  |       |       |       |
| 43489  | 1.03          | 68.40   | 4.60  |       |       |       |
| 43502  | 3.65          | 52.50   | 4.10  |       |       |       |
| 43511  | 0.70          | 54.70   | 5.80  |       |       |       |
| 43515  | 0.94          | 50.50   | 4.00  |       |       |       |
| MEAN   | 1.42          | 70.78   | 4.96  |       |       |       |
| S.D.   | 1.110         | 19.176  | 0.624 |       |       |       |
| N      | 8             | 10      | 10    |       |       |       |

UR = BELOW INSTRUMENT RANGE

ug/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH           | TOTAL  |       | TOTAL |       |
|--------|---------------|--------|-------|-------|-------|
|        |               | T3     | T4    | T3    | T4    |
| GROUP: | 300 MG/KG/DAY | ng/ml  | ug/dL | ng/ml | ug/dL |
| 43463  | 0.54          | 38.30  | 3.40  |       |       |
| 43475  | 6.16          | 57.20  | 5.30  |       |       |
| 43478  | 0.89          | 62.50  | 4.50  |       |       |
| 43491  | 1.79          | 53.10  | 6.00  |       |       |
| 43495  | 1.45          | 68.10  | 5.50  |       |       |
| 43496  | 7.66          | 74.30  | 4.90  |       |       |
| 43508  | UR            | 100.00 | 4.40  |       |       |
| 43513  | 0.41          | 86.30  | 3.90  |       |       |
| 43516  | 15.77         | 62.80  | 3.70  |       |       |
| 43517  | 0.95          | 67.60  | 3.70  |       |       |
| MEAN   | 3.96          | 67.02  | 4.53  |       |       |
| S.D.   | 5.145         | 17.215 | 0.876 |       |       |
| N      | 9             | 10     | 10    |       |       |

UR = BELOW INSTRUMENT RANGE

uG/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PAGE 7  
WEEK 13

PROJECT NO.: WIL-1986012  
SPONSOR: CMA-BFRIP

TABLE 113 (WEEK 13 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                       | TSH   | TOTAL  |       | TOTAL |       |
|------------------------------|-------|--------|-------|-------|-------|
|                              |       | T3     | T4    | ng/ml | ug/dL |
| GROUP: 1000 MG/KG/DAY FEMALE |       |        |       |       |       |
| 43440                        |       | 2.09   | QNS   | QNS   | QNS   |
| 43456                        |       | 2.83   | 75.40 | 3.50  | 3.50  |
| 43460                        |       | 1.49   | 91.70 | 4.00  | 4.00  |
| 43466                        |       | 6.87   | 53.00 | 4.30  | 4.30  |
| 43477                        |       | 0.96   | 83.70 | 4.20  | 4.20  |
| 43479                        |       | 3.21   | 42.00 | 3.90  | 3.90  |
| 43481                        |       | 2.66   | 81.30 | 4.40  | 4.40  |
| 43484                        |       | 1.09   | 53.20 | 3.60  | 3.60  |
| 43492                        |       | 1.79   | 77.90 | 4.90  | 4.90  |
| 43503                        |       | 1.34   | 74.60 | 6.00  | 6.00  |
| MEAN                         | 2.43  | 70.31  | 4.31  |       |       |
| S.D.                         | 1.735 | 16.783 | 0.762 |       |       |
| N                            | 10    | 9      | 9     |       |       |

QNS = QUANTITY NOT SUFFICIENT

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

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11/17/2000  
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PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL             | TSH   | TOTAL       |       | TOTAL       |       |
|--------------------|-------|-------------|-------|-------------|-------|
|                    |       | T3<br>ng/ml | ng/dL | T4<br>ug/dL | ug/mL |
| GROUP: 0 MG/KG/DAY |       |             |       |             |       |
|                    |       |             |       |             | MALES |
| 43289              | 1.48  | 80.60       | 6.10  |             |       |
| 43295              | 1.23  | 69.30       | 6.80  |             |       |
| 43308              | 3.07  | 78.20       | 7.10  |             |       |
| 43316              | 0.92  | 42.30       | 4.60  |             |       |
| 43326              | 0.81  | 51.90       | 7.50  |             |       |
| MEAN               | 1.50  | 64.46       | 6.42  |             |       |
| S.D.               | 0.915 | 16.745      | 1.139 |             |       |
| N                  | 5     | 5           | 5     |             |       |

ug/dL = MICROGRAMS/DECILITER,      ng/ml = NANOGRAMS/MILLILITER,

ug/mL = NANOGRAMS/DECILITER,      ng/dL = NANOGRAMS/DECILITER

PAGE 1  
WEEK 17

PROJECT NO. :WIL-186012  
SPONSOR :CNA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL               | TSH   | TOTAL  |       | TOTAL |       |
|----------------------|-------|--------|-------|-------|-------|
|                      |       | T3     | T4    | ng/ml | ug/dL |
| GROUP: 100 MG/KG/DAY |       |        |       |       |       |
|                      |       | MALES  |       |       |       |
| 43285                | UR    | 101.00 | 7.20  |       |       |
| 43293                | 0.14  | 78.70  | 7.60  |       |       |
| 43311                | 0.23  | 67.90  | 7.70  |       |       |
| 43320                | 0.35  | 76.60  | 5.30  |       |       |
| 43340                | 1.14  | 69.20  | 5.00  |       |       |
| MEAN                 | 0.47  | 78.68  | 6.56  |       |       |
| S.D.                 | 0.458 | 13.310 | 1.305 |       |       |
| N                    | 4     | 5      | 5     |       |       |

UR = BELOW INSTRUMENT RANGE

uG/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PAGE 2  
WEEK 17

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL               | TSH   | TOTAL          |                | TOTAL |       |
|----------------------|-------|----------------|----------------|-------|-------|
|                      |       | T <sub>3</sub> | T <sub>4</sub> | ng/ml | ug/dL |
| GROUP: 300 MG/KG/DAY |       |                |                |       |       |
|                      |       |                |                | MALES |       |
| 43290                | 0.28  | 71.00          | 5.80           |       |       |
| 43307                | 1.66  | 89.10          | 6.60           |       |       |
| 43309                | 0.26  | 68.40          | 8.00           |       |       |
| 43318                | 0.46  | 68.20          | 8.80           |       |       |
| 43322                | 0.53  | 61.10          | 6.00           |       |       |
| MEAN                 | 0.64  | 71.56          | 7.04           |       |       |
| S.D.                 | 0.583 | 10.472         | 1.307          |       |       |
| N                    | 5     | 5              | 5              |       |       |

ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                | TSH   | TOTAL  |       | TOTAL |       |
|-----------------------|-------|--------|-------|-------|-------|
|                       |       | T3     | T4    | ng/ml | ug/dL |
| GROUP: 1000 MG/KG/DAY |       |        |       |       |       |
|                       |       |        |       |       |       |
| 43277                 | 2.47  | 72.60  | 5.30  |       |       |
| 43278                 | 1.44  | 120.00 | 5.20  |       |       |
| 43280                 | 1.02  | 74.60  | 5.40  |       |       |
| 43281                 | 0.34  | 88.50  | 5.50  |       |       |
| 43282                 | 1.08  | 56.50  | 6.10  |       |       |
| MEAN                  | 1.27  | 82.44  | 5.50  |       |       |
| S.D.                  | 0.780 | 23.868 | 0.354 |       |       |
| N                     | 5     | 5      | 5     |       |       |

ug/dL = MICROGRAMS/DECILITER, ng/ml = NANOGRAMS/MILLILITER, ng/dL = NANOGRAMS/DECILITER

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL | TSH         | TOTAL   |       | TOTAL |       |
|--------|-------------|---------|-------|-------|-------|
|        |             | T3      | T4    | ng/ml | ug/dL |
| GROUP: | 0 MG/KG/DAY | FEMALES |       |       |       |
| 43398  |             | 1.15    | 83.40 | 3.50  |       |
| 43405  |             | 0.07    | 64.40 | 3.10  |       |
| 43409  |             | 0.14    | 68.30 | 1.80  |       |
| 43423  |             | 0.27    | 81.70 | 2.90  |       |
| 43432  |             | 0.29    | 69.90 | 4.70  |       |
| MEAN   | 0.38        | 73.54   | 3.20  |       |       |
| S.D.   | 0.438       | 8.486   | 1.049 |       |       |
| N      | 5           | 5       | 5     |       |       |

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

PAGE 5  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                | TSH   | TOTAL          |                |
|-----------------------|-------|----------------|----------------|
|                       |       | T <sub>3</sub> | T <sub>4</sub> |
| GROUP : 100 MG/KG/DAY |       | ng/ml          | ug/dL          |
| 43400                 | 0.17  | 73.10          | 3.90           |
| 43407                 | 0.54  | 81.60          | 3.50           |
| 43413                 | 0.39  | 83.50          | 4.50           |
| 43416                 | 0.32  | 63.90          | 3.00           |
| 43419                 | 0.43  | 62.90          | 3.30           |
| MEAN                  | 0.37  | 73.00          | 3.64           |
| S.D.                  | 0.137 | 9.605          | 0.581          |
| N                     | 5     | 5              | 5              |

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

PAGE 6  
WEEK 17

PROJECT NO.: WIL-196012  
SPONSOR: CNA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL               | TSH   | TOTAL   |       | TOTAL |       |
|----------------------|-------|---------|-------|-------|-------|
|                      |       | T3      | T4    | ng/ml | ug/dL |
| GROUP: 300 MG/KG/DAY |       |         |       |       |       |
|                      |       | FEMALES |       |       |       |
| 434402               | 0.47  | 66.80   | 3.00  |       |       |
| 434426               | 0.20  | 77.70   | 3.90  |       |       |
| 434442               | 0.17  | 118.00  | 4.10  |       |       |
| 434446               | 0.24  | 52.80   | 3.90  |       |       |
| 434461               | 0.21  | 73.40   | 3.30  |       |       |
| MEAN                 | 0.26  | 77.74   | 3.64  |       |       |
| S.D.                 | 0.121 | 24.400  | 0.467 |       |       |
| N                    | 5     | 5       | 5     |       |       |

ug/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

PAGE 7  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 114 (WEEK 17 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SERUM HORMONE VALUES

| ANIMAL                | TSH     | TOTAL          |                | TOTAL<br>T <sub>4</sub> | PAGE<br>8<br>WEEK 17 |
|-----------------------|---------|----------------|----------------|-------------------------|----------------------|
|                       |         | T <sub>3</sub> | T <sub>4</sub> |                         |                      |
|                       |         | ng/ml          | ng/dL          | ug/dL                   |                      |
| GROUP: 1000 MG/KG/DAY | FEMALES |                |                |                         |                      |
| 43401                 | 0.63    | 75.70          | 2.70           |                         |                      |
| 43410                 | 0.68    | 85.30          | 5.30           |                         |                      |
| 43421                 | 0.20    | 128.00         | 4.50           |                         |                      |
| 43429                 | 0.27    | 87.50          | 3.80           |                         |                      |
| 43430                 | 0.59    | 55.30          | 3.70           |                         |                      |
| MEAN                  | 0.47    | 86.36          | 4.00           |                         |                      |
| S.D.                  | 0.222   | 26.527         | 0.970          |                         |                      |
| N                     | 5       | 5              | 5              |                         |                      |

uG/dL = MICROGRAMS/DECILITER,

ng/ml = NANOGRAMS/MILLILITER,

ng/dL = NANOGRAMS/DECILITER

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1.1/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRP

TABLE 115 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG  | SEX | FINDING                       | GRADE |
|-----------|---------------|------|-----|-------------------------------|-------|
|           |               |      |     |                               |       |
| 43289     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43295     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43308     | 0 MG/KG/DAY   | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43316     | 0 MG/KG/DAY   | MALE |     | CORNEAL CRYSTALS - BILATERAL  | 1     |
| 43326     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |
| 43332     | 0 MG/KG/DAY   | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43334     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |
| 43336     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43339     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43349     | 0 MG/KG/DAY   | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43365     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |
| 43368     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43369     | 0 MG/KG/DAY   | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43379     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |
| 43391     | 0 MG/KG/DAY   | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43285     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43293     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43311     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43320     | 100 MG/KG/DAY | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43340     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |
| 43342     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43350     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | P     |
| 43351     | 100 MG/KG/DAY | MALE |     | CORNEAL CRYSTALS - BILATERAL  | P     |
| 43354     | 100 MG/KG/DAY | MALE |     | NO OCULAR LESIONS - BILATERAL | 1     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

TABLE 115 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY:  | HGG  | SEX | FINDING                       | EXAM 1 (WEEK -1) |       |
|-----------|----------------|------|-----|-------------------------------|------------------|-------|
|           |                |      |     |                               |                  | GRADE |
| 43364     | 100 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43371     | 100 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43380     | 100 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43382     | 100 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | P     |
| 43384     | 100 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43386     | 100 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43290     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | 1     |
| 43307     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | P     |
| 43309     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | 1     |
| 43318     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43322     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43323     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43331     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | P     |
| 43341     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43345     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | 1     |
| 43351     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43361     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43363     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43383     | 300 MG/KG/DAY  | MALE |     | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43385     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | P     |
| 43388     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43392     | 300 MG/KG/DAY  | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43277     | 1000 MG/KG/DAY | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43278     | 1000 MG/KG/DAY | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43280     | 1000 MG/KG/DAY | MALE |     | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

TABLE 115 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY:  | HGG    | SEX | FINDING                       | EXAM 1 (WEEK -1) |            |       |
|-----------|----------------|--------|-----|-------------------------------|------------------|------------|-------|
|           |                |        |     |                               | ANIMAL NO.       | DOSE GROUP | GRADE |
| 43281     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43282     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43297     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43325     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43328     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43346     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43359     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43362     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43372     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43373     | 1000 MG/KG/DAY | MALE   |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43377     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | 1     |
| 43397     | 1000 MG/KG/DAY | MALE   |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43398     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43405     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43409     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43423     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43432     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43433     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43435     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43436     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43438     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43449     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43467     | 0 MG/KG/DAY    | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43474     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

| EXAMINER: | DAW INPUT BY:   | HGG    | SEX | FINDING                       | GRADE            |  |
|-----------|-----------------|--------|-----|-------------------------------|------------------|--|
|           |                 |        |     |                               | EXAM 1 (WEEK -1) |  |
| 43483     | 0 MG / KG/DAY   | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43497     | 0 MG / KG/DAY   | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43501     | 0 MG / KG/DAY   | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43400     | 100 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43407     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43413     | 100 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43416     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43419     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43420     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43439     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43458     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43462     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43468     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43486     | 100 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43489     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43502     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43511     | 100 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43515     | 100 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43402     | 300 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43426     | 300 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43442     | 300 MG / KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL | P                |  |
| 43446     | 300 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43461     | 300 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |
| 43463     | 300 MG / KG/DAY | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  | 1                |  |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 115 (WEEK -1 PRETEST EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG       | SEX    | FINDING                       | EXAM 1 (WEEK -1) |            |
|-----------|---------------|-----------|--------|-------------------------------|------------------|------------|
|           |               |           |        |                               | ANIMAL NO.       | DOSE GROUP |
| 43475     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  |                  |            |
| 43478     | 3.00          | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43491     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43495     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43496     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43508     | 3.00          | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43513     | 3.00          | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43516     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43517     | 3.00          | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43401     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43410     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43421     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43429     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43430     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43440     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43456     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43460     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43466     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43477     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43479     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43481     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43484     | 1.000         | MG/KG/DAY | FEMALE | CORNEAL CRYSTALS - BILATERAL  | 1                | P          |
| 43492     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |
| 43503     | 1.000         | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL | 1                | P          |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

PEXv4.0  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
 SPONSOR : CWA-BFRIP

TABLE 116 (WEEK 12 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG       | SEX  | FINDING                       | EXAM 2 (WEEK 12) |       |
|-----------|---------------|-----------|------|-------------------------------|------------------|-------|
|           |               |           |      |                               |                  | GRADE |
| 43289     | 0             | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43295     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43308     | 0             | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43316     | 0             | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43326     | 0             | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43332     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | 1     |
| 43334     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43336     | 0             | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | P     |
| 43339     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | 1     |
| 43349     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43365     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43368     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43369     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43379     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43391     | 0             | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43285     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43293     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43311     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43320     | 100           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43340     | 100           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43342     | 100           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  | 1     |
| 43350     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43351     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43354     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  | P     |

CODE: 1 - SLIGHT, 2 - MODERATE, 3 - SEVERE, P - PRESENT, O.D. - RIGHT EYE, O.S. - LEFT EYE

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 116 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG       | SEX  | FINDING                       | EXAM 2 (WEEK 12) |            | GRADE |
|-----------|---------------|-----------|------|-------------------------------|------------------|------------|-------|
|           |               |           |      |                               | ANIMAL NO.       | DOSE GROUP |       |
| 43364     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43371     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43380     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43382     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43384     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43386     | 100           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43290     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43307     | 300           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43309     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43318     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43322     | 300           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43323     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43331     | 300           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43341     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43355     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43361     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43363     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43383     | 300           | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43385     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43388     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43392     | 300           | MG/KG/DAY | MALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43277     | 1000          | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43278     | 1000          | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43280     | 1000          | MG/KG/DAY | MALE | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |

CODE: 1 - SLIGHT, 2 - MODERATE, 3 - SEVERE, P - PRESENT, O.D. - RIGHT EYE, O.S. - LEFT EYE

TABLE 116 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG       | SEX    | FINDING                       | EXAM 2 (WEEK 12) |       |
|-----------|---------------|-----------|--------|-------------------------------|------------------|-------|
|           |               |           |        |                               |                  | GRADE |
| 43281     | 1000          | MG/KG/DAY | MALE   | CORNEL CRYSTALS - BILATERAL   | 1                | P     |
| 43282     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43297     | 1000          | MG/KG/DAY | MALE   | CORNEL CRYSTALS - BILATERAL   | 1                | P     |
| 43325     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43328     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43346     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43362     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43372     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43373     | 1000          | MG/KG/DAY | MALE   | CORNEL CRYSTALS - BILATERAL   | 1                | P     |
| 43377     | 1000          | MG/KG/DAY | MALE   | CORNEL CRYSTALS - BILATERAL   | 1                | P     |
| 43397     | 1000          | MG/KG/DAY | MALE   | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43398     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43405     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43409     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43423     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43432     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43433     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43435     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43436     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43438     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43449     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43467     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43474     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |
| 43483     | 0             | MG/KG/DAY | FEMALE | NO OCULAR LESIONS - BILATERAL |                  | P     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

PROJECT NO.: WIL-186012  
 SPONSOR: CNA-BFRIP

TABLE 116 (WEEK 12 EVALUATION)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | DAW INPUT BY: | HGG    | SEX | FINDING                       | EXAM 2 (WEEK 12) |            |
|-----------|---------------|--------|-----|-------------------------------|------------------|------------|
|           |               |        |     |                               | ANIMAL NO.       | DOSE GROUP |
| 43497     | 0 MG/KG/DAY   | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43501     | 0 MG/KG/DAY   | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43440     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43407     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43413     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43416     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43419     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43420     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43439     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43458     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43462     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43468     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43486     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43489     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43502     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43511     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43515     | 100 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43402     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43426     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43442     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43446     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43461     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43463     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |
| 43475     | 300 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  | P          |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 116 (WEEK 12 EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER:  | DAW INPUT BY:  | HGG    | SEX | FINDING            | GRADE            |                  |
|------------|----------------|--------|-----|--------------------|------------------|------------------|
|            |                |        |     |                    | EXAM 1 (WEEK 12) | EXAM 2 (WEEK 12) |
| ANIMAL NO. | DOSE GROUP     |        |     |                    |                  |                  |
| 43478      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | BILATERAL        | P                |
| 43491      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43495      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43496      | 300 MG/KG/DAY  | FEMALE |     | CORNEAL CRYSTALS - | BILATERAL        | P                |
| 43508      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | 1                |
| 43513      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43516      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43517      | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43401      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43410      | 1000 MG/KG/DAY | FEMALE |     | CORNEAL CRYSTALS - | BILATERAL        | 1                |
| 43421      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43429      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43430      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43440      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43445      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43450      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43466      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43477      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43479      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43481      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43484      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43492      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |
| 43503      | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS  | - BILATERAL      | P                |

CODE: 1 - SLIGHT, 2 - MODERATE, 3 - SEVERE, P - PRESENT, O.D. - RIGHT EYE, O.S. - LEFT EYE

PEXv4.0  
11/17/2000  
R:07/18/2001

TABLE 117 (WEEK 15 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | BCG INPUT BY:  | CLH    | SEX    | FINDING                       | EXAM 3 (WEEK 15) |            | GRADE |
|-----------|----------------|--------|--------|-------------------------------|------------------|------------|-------|
|           |                |        |        |                               | ANIMAL NO.       | DOSE GROUP |       |
| 43289     | 0 MG/KG/DAY    | MALE   | MALE   | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43295     | 0 MG/KG/DAY    | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43308     | 0 MG/KG/DAY    | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43316     | 0 MG/KG/DAY    | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43326     | 0 MG/KG/DAY    | MALE   | MALE   | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43285     | 100 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43293     | 100 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43311     | 100 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43320     | 100 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43340     | 100 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43290     | 300 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43307     | 300 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43309     | 300 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43318     | 300 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43322     | 300 MG/KG/DAY  | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43277     | 1000 MG/KG/DAY | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43278     | 1000 MG/KG/DAY | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43280     | 1000 MG/KG/DAY | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43281     | 1000 MG/KG/DAY | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43282     | 1000 MG/KG/DAY | MALE   | MALE   | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43398     | 0 MG/KG/DAY    | FEMALE | FEMALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43405     | 0 MG/KG/DAY    | FEMALE | FEMALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43409     | 0 MG/KG/DAY    | FEMALE | FEMALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43423     | 0 MG/KG/DAY    | FEMALE | FEMALE | NO OCULAR LESIONS - BILATERAL |                  |            | P     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

TABLE 11.7 (WEEK 15 RECOVERY EVALUATION)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL OPHTHALMOLOGICAL EXAMINATION FINDINGS

| EXAMINER: | BCG INPUT BY:  | CLH    | SEX | FINDING                       | EXAM 3 (WEEK 15) |            | GRADE |
|-----------|----------------|--------|-----|-------------------------------|------------------|------------|-------|
|           |                |        |     |                               | ANIMAL NO.       | DOSE GROUP |       |
| 43432     | 0 MG/KG/DAY    | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43400     | 100 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43407     | 100 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43413     | 100 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43416     | 100 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43419     | 100 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43402     | 300 MG/KG/DAY  | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | P     |
| 43426     | 300 MG/KG/DAY  | FEMALE |     | CORNEAL CRYSTALS - BILATERAL  |                  |            | 1     |
| 43442     | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | 1     |
| 43446     | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43461     | 300 MG/KG/DAY  | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43401     | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43410     | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43421     | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43429     | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |
| 43430     | 1000 MG/KG/DAY | FEMALE |     | NO OCULAR LESIONS - BILATERAL |                  |            | P     |

CODE: 1-SLIGHT, 2-MODERATE, 3-SEVERE, P-PRESENT, O.D.-RIGHT EYE, O.S.-LEFT EYE

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11/17/2000  
R:07/18/2001

ESTROUS STAGE CODE: E = ESTRUS, D = DIESTRUS, M = METESTRUS, P = PROESTRUS  
 A = ONE OCCURRENCE OR NO ESTRUS RECORDED DURING THE OBSERVATION PERIOD, NOT INCLUDED IN CALCULATION OF MEAN

TABLE 118  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ESTROUS CYCLE DATA

| FEMALES FROM GROUP 2: 100 MG/KG/DAY |                                                         | INDIVIDUAL MEAN LENGTH OF ESTROUS CYCLE (IN DAYS) |   |   |   |   |   |   |   |   |   |   |                   |
|-------------------------------------|---------------------------------------------------------|---------------------------------------------------|---|---|---|---|---|---|---|---|---|---|-------------------|
| FEMALE NUMBER                       | DETERMINATION DAY: 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5        | 1                                                 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 5.0               |
| 43400                               | D D P E D D P E D D P E D D P E D D D E D D D E D D     |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43407                               | D M D D D E D D P E D D P E D D D E D D P E M D D       |                                                   |   |   |   |   |   |   |   |   |   |   | 6.0               |
| 43413                               | D D D E D D D D D D D D D D D D D D D D D M D D         |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43416                               | D P E D D D D D D D D D D D D D D D D D D D M D D       |                                                   |   |   |   |   |   |   |   |   |   |   | 3.5               |
| 43419                               | D D D D D D D D D D D D D D D D D D D D D P M D D D     |                                                   |   |   |   |   |   |   |   |   |   |   | A                 |
| 43420                               | M D D D D D D D D D D D D D D D D D D D D D D D D       |                                                   |   |   |   |   |   |   |   |   |   |   | 4.8               |
| 43439                               | M D D D E D D D D D D D D D D D D D D P E M D D D E M   |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43458                               | D D D E D D D D D D D D D D D D D D D D D D D D D E     |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43462                               | D D D D D D D E D D D D D D D D D D D P E D D D D E D   |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43468                               | M D D D D D M D D D D D D D D D D D D D D D M D D D     |                                                   |   |   |   |   |   |   |   |   |   |   | A                 |
| 43486                               | D E D D D E D D D D D D D D D D D D D D E M D D D D     |                                                   |   |   |   |   |   |   |   |   |   |   | 4.7               |
| 43489                               | E D D D D E D D D D D D D D D D D D D D D D D D D D D   |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43502                               | E D D D D E D D D D D D D D D D D D D D D D D D D D E   |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
| 43511                               | D E D D D D D D D D D D D D D D D D D D D D D D D D D D |                                                   |   |   |   |   |   |   |   |   |   |   | 9.0               |
| 43515                               | E D D D E D D D E D D D E M D D D D D D D D D D D D D D |                                                   |   |   |   |   |   |   |   |   |   |   | 4.0               |
|                                     |                                                         |                                                   |   |   |   |   |   |   |   |   |   |   | MEAN<br>S.D.<br>N |
|                                     |                                                         |                                                   |   |   |   |   |   |   |   |   |   |   | 4.7<br>1.45<br>13 |

ESTROUS STAGE CODE: E = ESTRUS, D = DIESTRUS, M = METESTRUS, P = PROESTRUS  
 A = ONE OCCURRENCE OR NO ESTRUS RECORDED DURING THE OBSERVATION PERIOD, NOT INCLUDED IN CALCULATION OF MEAN

SERIOUS STAGE ONE

N = NOT ENTERED      A = ONE OCCURRENCE OR NO ESTRUS RECORDED DURING THE OBSERVATION PERIOD, NOT INCLUDED IN CALCULATION OF MEAN

TABLE 118  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ESTROUS CYCLE DATA

| FEMALES FROM GROUP 4: 1000 MG/KG/DAY |  | DETERMINATION<br>DAY: | INDIVIDUAL MEAN<br>LENGTH OF ESTROUS<br>CYCLE (IN DAYS) |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|--|-----------------------|---------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FEMALE<br>NUMBER                     |  |                       | 1                                                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 |
| 43401                                |  | D                     | D                                                       | D | D | M | D | D | D | D | D | D | D | D | D | M |
| 43410                                |  | P                     | P                                                       | M | D | E | D | D | D | P | M | D | D | D | D | D |
| 43421                                |  | D                     | D                                                       | D | D | M | M | D | D | D | D | D | D | D | D | D |
| 43429                                |  | D                     | D                                                       | E | D | D | E | E | D | D | D | D | D | D | E | D |
| 43430                                |  | D                     | D                                                       | D | P | E | D | D | P | E | D | D | D | D | D | D |
| 43440                                |  | D                     | D                                                       | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 43446                                |  | P                     | P                                                       | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 43456                                |  | P                     | D                                                       | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 43460                                |  | D                     | E                                                       | D | D | E | D | D | D | E | D | D | D | D | D | D |
| 43466                                |  | D                     | D                                                       | D | D | M | M | D | D | D | D | D | D | D | D | D |
| 43477                                |  | M                     | D                                                       | D | D | E | M | D | D | E | M | D | D | D | P | D |
| 43479                                |  | D                     | D                                                       | E | M | D | D | E | D | D | E | M | D | D | E | D |
| 43481                                |  | D                     | D                                                       | E | D | D | D | D | D | D | D | D | D | D | D | D |
| 43484                                |  | D                     | D                                                       | D | M | D | M | M | D | D | D | D | D | D | D | D |
| 43492                                |  | E                     | D                                                       | D | E | M | D | D | D | D | D | P | E | M | D | D |
| 43503                                |  | M                     | D                                                       | D | E | M | D | D | D | D | D | E | M | D | D | D |
| MEAN<br>S.D.<br>N                    |  |                       |                                                         |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5.2<br>1.08<br>11                    |  |                       |                                                         |   |   |   |   |   |   |   |   |   |   |   |   |   |

ESTROUS STAGE CODE: E = ESTRUS, D = DIESTRUS, M = METESTRUS, P = PROESTRUS  
A = ONE OCCURRENCE OR NO ESTRUS RECORDED DURING THE OBSERVATION PERIOD, NOT INCLUDED IN CALCULATION OF MEAN

PCYCv4.0  
11/09/2000  
R:12/11/2001

PROJECT NO.: WIL 186012  
SPONSOR: CMA-BFRIP

TABLE 119 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
GROSS AND MICROSCOPIC DESCRIPTION OF ORGANS

| ANIMAL NO. | GROUP           | 4: 1000 MG/KG/DAY | MALE | FOUND DEAD                                               | 05/07/00 | DATE OF DEATH: | 05/07/00 | STUDY DAY: 11 | PAGE 1 GRADE |
|------------|-----------------|-------------------|------|----------------------------------------------------------|----------|----------------|----------|---------------|--------------|
|            | KIDNEYS         |                   |      | GROSS: DILATED PELVIS                                    |          |                |          |               | 1            |
|            | KIDNEYS         |                   |      | MICRO: INFILTRATION, SUBACUTE<br>BASOPHILIC TUBULES      |          |                |          |               | 1            |
|            | LIVER           |                   |      | HYDRONEPHROSIS                                           |          |                |          |               | 1            |
|            |                 |                   |      | CORRELATES WITH GROSS DILATED PELVIS                     |          |                |          |               | 2            |
|            |                 |                   |      | MICRO: INFILTRATION, SUBACUTE<br>PAS STAIN, POSITIVE     |          |                |          |               | 1            |
|            |                 |                   |      | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT |          |                |          |               | 3            |
|            | LUNGS           |                   |      | OIL RED O, POSITIVE                                      |          |                |          |               | 2            |
|            | LUNGS           |                   |      | PERIPORTAL TO MIDZONAL                                   |          |                |          |               | P            |
|            |                 |                   |      | GROSS: DARK RED AREA(S)                                  |          |                |          |               |              |
|            |                 |                   |      | MULTIPLE, IRREGULARLY SHAPED, ALL LOBES                  |          |                |          |               |              |
|            | STOMACH, GLD    |                   |      | MICRO: CORRELATES WITH GROSS DARK RED AREA (S)           |          |                |          |               | 3            |
|            | STOMACH, NONGLD |                   |      | MICRO: NO SIGNIFICANT CHANGES OBSERVED                   |          |                |          |               |              |
|            | PARATHYROID     |                   |      | NO CORRELATE TO GROSS RED CONTENTS                       |          |                |          |               |              |
|            |                 |                   |      | MICRO: NO SIGNIFICANT CHANGES OBSERVED                   |          |                |          |               |              |
|            | SKIN            |                   |      | NO CORRELATE TO GROSS RED CONTENTS                       |          |                |          |               |              |
|            | SPLEEN          |                   |      | MICRO: NO SIGNIFICANT CHANGES OBSERVED                   |          |                |          |               |              |
|            | STOMACH         |                   |      | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION  |          |                |          |               | P            |
|            |                 |                   |      | GROSS: RED MATTING                                       |          |                |          |               |              |
|            |                 |                   |      | NASAL; BUCCAL                                            |          |                |          |               |              |
|            |                 |                   |      | MICRO: HEMATOPOIESIS, EXTRAMEDULLARY                     |          |                |          |               | 1            |
|            |                 |                   |      | GROSS: DARK RED CONTENTS                                 |          |                |          |               | P            |

TABLE 119 (UNSCHEDULED DEATH)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
GROSS AND MICROSCOPIC DESCRIPTION OF ORGANS

FOR DIAGNOSIS

MICRO:ILEUM

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PGRHv4.27  
R:07/18/2001  
P:07/12/2001

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

UN 433333 GROWTH 1.0 0 MFR / PMS  
NOMINAI. 2000-01-01 00:00:00

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43332 | GROUP | 1: | 0 | MG/KG/DAY | MALE            | SCHEDULED EUTH | 07/28/00        | DATE OF DEATH:   | 07/28/00 | STUDY DAY: | 93 | GRADE |
|------------|-------|-------|----|---|-----------|-----------------|----------------|-----------------|------------------|----------|------------|----|-------|
|            |       |       |    |   |           | LUNGS           | ADENAL MEDULLA | NERVE, SCIATIC  | STOMACH, GLD     |          |            |    |       |
|            |       |       |    |   |           | STOMACH, NONGLD | MARROW, STERN  | PANCREAS        | PARATHYROID      |          |            |    |       |
|            |       |       |    |   |           | RT EPIDIDYMIS   | PITUITARY      | SAL. GLAND MAND | SEMINAL VESICLES |          |            |    |       |
|            |       |       |    |   |           | SKIN            | SPINAL CORD    | SPLIFEN         | LYMPH NODE, MAND |          |            |    |       |
|            |       |       |    |   |           | THYROID GLANDS  | RT TESTIS      | TRACHEA         | VAS DEFERENS     |          |            |    |       |
|            |       |       |    |   |           | URINARY BLADDER |                |                 |                  |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 3

| ANIMAL NO.        | 43334    | GROUP | 1:                                 | 0 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: 07/28/00 | STUDY DAY: 93 | GRADE |
|-------------------|----------|-------|------------------------------------|-------------|------|----------------|----------|-------------------------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  |                                    |             |      |                |          |                         |               |       |
| BRAIN             | 2.14     | 0.404 |                                    |             |      |                |          |                         |               | 2     |
| LIVER             | 14.34    | 2.706 | KIDNEYS                            |             |      |                |          |                         |               | 1     |
| KIDNEYS           | 3.39     | 0.640 | LIVER                              |             |      |                |          |                         |               | 1     |
| HEART             | 1.78     | 0.336 | LUNGS                              |             |      |                |          |                         |               | 1     |
| SPLEEN            | 1.01     | 0.191 | PANCREAS                           |             |      |                |          |                         |               | 1     |
| PROSTATE          | 1.00     | 0.189 | PROSTATE                           |             |      |                |          |                         |               | 2     |
| RT TESTIS         | 1.76     | 0.332 | SPLEEN                             |             |      |                |          |                         |               | 1     |
| LT TESTIS         | 1.69     | 0.319 | THYMUS GLAND                       |             |      |                |          |                         |               | 1     |
| RT EPIDIDYMIS     | 0.72     | 0.136 | NO SIGNIFICANT<br>CHANGES OBSERVED |             |      |                |          |                         |               | 1     |
| LT EPIDIDYMIS     | 0.70     | 0.132 |                                    |             |      |                |          |                         |               |       |
| RT CAUDA EPID     | 0.2919   | 0.055 |                                    |             |      |                |          |                         |               |       |
| LT CAUDA EPID     | 0.3338   | 0.063 |                                    |             |      |                |          |                         |               |       |
| THYMUS GLAND      | 0.3474   | 0.066 |                                    |             |      |                |          |                         |               |       |
| ADRENAL GLANDS    | 0.0611   | 0.012 |                                    |             |      |                |          |                         |               |       |
| THYROIDS/ PARA    | 0.0202   | 0.004 |                                    |             |      |                |          |                         |               |       |
| FINAL BODY WT (G) | 530.     |       |                                    |             |      |                |          |                         |               |       |

|                                                            |                                                                |                                 |                          |                                     |                |                   |  |  |  |  |
|------------------------------------------------------------|----------------------------------------------------------------|---------------------------------|--------------------------|-------------------------------------|----------------|-------------------|--|--|--|--|
| MICRO: INFILTRATION, SUBACUTE<br>MICRO: BASOPHILIC TUBULES | MICRO: INFILTRATION, SUBACUTE<br>MICRO: INFILTRATION, SUBACUTE | MICRO: MINERALIZATION, VASCULAR | MICRO: INFILTRATE, FATTY | MICRO: INFILTRATION, CHRONIC ACTIVE | MICRO: ATROPHY | MICRO: HEMORRHAGE |  |  |  |  |
| CECUM                                                      | CECUM                                                          | AORTA                           | STERNEBRAE               | STERNEBRAE                          |                |                   |  |  |  |  |
| KIDNEYS                                                    | EYES/OPTIC N.                                                  | COLON                           | DUODENUM                 | DUODENUM                            |                |                   |  |  |  |  |
| LIVER                                                      | KIDNEYS                                                        | HEART                           | ILEUM                    | ILEUM                               |                |                   |  |  |  |  |
| LUNGS                                                      | NERVE, SCATIATIC                                               | LIVER                           | LYMPH NODE, MES          | LYMPH NODE, MES                     |                |                   |  |  |  |  |
| PANCREAS                                                   | RECTUM                                                         | PANCREAS                        | LT EPIDIDYMIS            | LT EPIDIDYMIS                       |                |                   |  |  |  |  |
| PROSTATE                                                   | SEMINAL VESICLES                                               | PITUITARY                       | PROSTATE                 | PROSTATE                            |                |                   |  |  |  |  |
| SPLINAL CORD                                               | SKELETAL MUSCLE                                                | STOMACH                         | SKIN                     | SKIN                                |                |                   |  |  |  |  |
| SPLEEN                                                     | THYROID GLANDS                                                 | STOMACH                         | LYMPH NODE, MAND         | LYMPH NODE, MAND                    |                |                   |  |  |  |  |
| THYROID GLANDS                                             | RT TESTIS                                                      | RT TESTIS                       | THYMUS GLAND             | THYMUS GLAND                        |                |                   |  |  |  |  |
| VAS DEFERENS                                               | URINARY BLADDER                                                | LT TESTIS                       | TRACHEA                  | TRACHEA                             |                |                   |  |  |  |  |
| MICRO: AORTA                                               | STERNEBRAE                                                     |                                 |                          |                                     |                |                   |  |  |  |  |
| DUODENUM                                                   | ESOPHAGUS                                                      |                                 |                          |                                     |                |                   |  |  |  |  |
| ILEUM                                                      | JEJUNUM                                                        |                                 |                          |                                     |                |                   |  |  |  |  |
| ADRENAL MEDULLA                                            | NERVE, SCATIATIC                                               |                                 |                          |                                     |                |                   |  |  |  |  |
| MARROW, STERN                                              | PARATHYROID                                                    |                                 |                          |                                     |                |                   |  |  |  |  |
| PITUITARY                                                  | SAL. GLAND MAND                                                |                                 |                          |                                     |                |                   |  |  |  |  |
| SKIN                                                       | SPINAL CORD                                                    |                                 |                          |                                     |                |                   |  |  |  |  |
| RT TESTIS                                                  | TRACHEA                                                        |                                 |                          |                                     |                |                   |  |  |  |  |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 4

| ANIMAL NO.        | 43336    | GROUP | 1:                    | 0 MG/KG/DAY                              | MALE             | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|-----------------------|------------------------------------------|------------------|----------------|----------|-------------------------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                 | MICRO: INFLAMMATION, SUBACUTE            |                  |                |          |                         |               | 1     |
| BRAIN             | 2.19     | 0.474 | LUNGS                 | MICRO: MINERALIZATION, VASCULAR          |                  |                |          |                         |               | 1     |
| LIVER             | 12.11    | 2.621 | PROSTATE              | MICRO: HISTIOCYTOSIS, ALVEOLAR           |                  |                |          |                         |               | 1     |
| KIDNEYS           | 3.24     | 0.701 | LYMPH NODE, MAND      | MICRO: INFILTRATION, SUBACUTE            |                  |                |          |                         |               | 1     |
| HEART             | 1.58     | 0.342 | GROSS: ENLARGED       | GROSS: ENLARGED                          |                  |                |          |                         |               | 1     |
| SPLEEN            | 0.67     | 0.145 | RIGHT                 | RIGHT                                    |                  |                |          |                         |               | P     |
| PROSTATE          | 0.90     | 0.195 | LYMPH NODE, MAND      | MICRO: NO SIGNIFICANT CHANGES OBSERVED   |                  |                |          |                         |               |       |
| RT TESTIS         | 1.74     | 0.377 | THYMUS GLAND          | MICRO: NO CORRELATE TO GROSS ENLARGEMENT |                  |                |          |                         |               |       |
| LT TESTIS         | 1.77     | 0.383 |                       | MICRO: HEMORRHAGE                        |                  |                |          |                         |               |       |
| RT EPIDIDYMIS     | 0.76     | 0.165 |                       | ATROPHY                                  |                  |                |          |                         |               | 1     |
| LT EPIDIDYMIS     | 0.71     | 0.154 | THYROID GLANDS        | MICRO: INFLAMMATION, SUBACUTE            |                  |                |          |                         |               | 1     |
| RT CAUDA EPID     | 0.3033   | 0.066 | NO SIGNIFICANT        |                                          |                  |                |          |                         |               | 2     |
| LT CAUDA EPID     | 0.2652   | 0.057 | CHANGES OBSERVED      |                                          |                  |                |          |                         |               |       |
| THYMUS GLAND      | 0.3706   | 0.080 | GROSS: ADRENAL GLANDS | AORTA                                    | STERNEBRAE       |                |          |                         |               |       |
| ADRENAL GLANDS    | 0.0463   | 0.010 | CECUM                 | COLON                                    | DUODENUM         |                |          |                         |               |       |
| THYROIDS/PARA     | 0.0261   | 0.006 | EYES/OPTIC N.         | HEART                                    | ILEUM            |                |          |                         |               |       |
| FINAL BODY WT (G) | 462.     |       | KIDNEYS               | LIVER                                    | LYMPH NODE, MES  |                |          |                         |               |       |
|                   |          |       | NERVE, SCIATIC        | PANCREAS                                 | RT EPIDIDYMIS    |                |          |                         |               |       |
|                   |          |       | RECTUM                | PITUITARY                                | PROSTATE         |                |          |                         |               |       |
|                   |          |       | SEMINAL VESICLES      | SKELETAL MUSCLE                          | SKIN             |                |          |                         |               |       |
|                   |          |       | SPLEEN                | STOMACH                                  | THYMUS GLAND     |                |          |                         |               |       |
|                   |          |       | RT TESTIS             | LT TESTIS                                | TRACHEA          |                |          |                         |               |       |
|                   |          |       | URINARY BLADDER       |                                          |                  |                |          |                         |               |       |
|                   |          |       | MICRO: AORTA          | STERNEBRAE                               | BRAIN            |                |          |                         |               |       |
|                   |          |       | COLON                 | DUODENUM                                 | ESOPHAGUS        |                |          |                         |               |       |
|                   |          |       | HEART                 | ILEUM                                    | CECUM            |                |          |                         |               |       |
|                   |          |       | LYMPH NODE, MES       | ADRENAL CORTEX                           | EYES/OPTIC N.    |                |          |                         |               |       |
|                   |          |       | STOMACH, GLD          | STOMACH, NONGLD                          | KIDNEYS          |                |          |                         |               |       |
|                   |          |       | PARATHYROID           | RT EPIDIDYMIS                            | NERVE, SCIATIC   |                |          |                         |               |       |
|                   |          |       | SAL. GLAND MAND       | SEMINAL VESICLES                         | PANCREAS         |                |          |                         |               |       |
|                   |          |       | SPINAL CORD           | SPILEN                                   | PITUITARY        |                |          |                         |               |       |
|                   |          |       | TRACHEA               | VAS DEFERENS                             | SKIN             |                |          |                         |               |       |
|                   |          |       |                       |                                          | LYMPH NODE, MAND |                |          |                         |               |       |
|                   |          |       |                       |                                          | RT TESTIS        |                |          |                         |               |       |
|                   |          |       |                       |                                          | URINARY BLADDER  |                |          |                         |               |       |

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43336 | GROUP | 1: | 0 | MG/KG/DAY | MALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 |
|------------|-------|-------|----|---|-----------|------|----------------|----------|----------------|----------|------------|----|
|------------|-------|-------|----|---|-----------|------|----------------|----------|----------------|----------|------------|----|

PAGE 5

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

ANIMAL NO. 43339 GROUP 1: 0 MG/KG/DAY MALE SCHEDULED EUTH 07/28/00 DATE OF DEATH: 07/28/00 STUDY DAY: 93 GRADE

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.      | 43349 | GROUP            | 1: | 0               | MG/KG/DAY | MALE | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE           |
|-----------------|-------|------------------|----|-----------------|-----------|------|----------------|----------|----------------|----------|------------|----|-----------------|
|                 |       |                  |    |                 |           |      |                |          |                |          |            |    |                 |
| COLON           |       | DUODENUM         |    | ESOPHAGUS       |           |      |                |          |                |          |            |    |                 |
| HEART           |       | ILEUM            |    | JEJUNUM         |           |      |                |          |                |          |            |    | EYES/OPTIC N.   |
| ADRENAL CORTEX  |       | ADRENAL MEDULLA  |    | NERVE SCIATIC   |           |      |                |          |                |          |            |    | LYMPH NODE, MES |
| STOMACH, NONGLD |       | MARROW, STERN    |    | PANCREAS        |           |      |                |          |                |          |            |    | STOMACH, GLD    |
| RT EPIDIDYMIS   |       | RECTUM           |    | PITUITARY       |           |      |                |          |                |          |            |    | PARATHYROID     |
| SAL. GLAND MAND |       | SEMINAL VESICLES |    | SKELETAL MUSCLE |           |      |                |          |                |          |            |    | PROSTATE        |
| SPINAL CORD     |       | RT TESTIS        |    | TRACHEA         |           |      |                |          |                |          |            |    | SKIN            |
| URINARY BLADDER |       |                  |    |                 |           |      |                |          |                |          |            |    | VAS DEFERENS    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43365    | GROUP | 1:                              | 0 MG/KG/DAY                                             | MALE | SCHEDULED EUTH. | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|---------------------------------|---------------------------------------------------------|------|-----------------|----------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | EPIDIDYMIDES                    | GROSS: SMALL                                            |      |                 |          |                |          |            |    | P     |
| BRAIN             | 1.88     | 0.382 |                                 | BILATERAL                                               |      |                 |          |                |          |            |    |       |
| LIVER             | 12.85    | 2.612 | LIVER                           | MICRO: INFILTRATION, SUBACUTE                           |      |                 |          |                |          |            |    | 1     |
| KIDNEYS           | 3.20     | 0.650 |                                 | HEMATOPOEISIS, EXTRAMEDULLARY                           |      |                 |          |                |          |            |    | 1     |
| HEART             | 1.44     | 0.293 | PARATHYROID                     | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  |      |                 |          |                |          |            |    |       |
| SPLEEN            | 0.60     | 0.122 |                                 | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION |      |                 |          |                |          |            |    |       |
| PROSTATE          | 0.54     | 0.110 | RT EPIDIDYMIS                   | MICRO: LUMINAL DEBRIS, CELLULAR                         |      |                 |          |                |          |            |    | 3     |
| RT TESTIS         | 0.57     | 0.116 |                                 | HYPOSPERMIA                                             |      |                 |          |                |          |            |    | 3     |
| LT TESTIS         | 0.53     | 0.108 |                                 | CORRELATES WITH GROSS OBSERVATION OF SMALL              |      |                 |          |                |          |            |    | 4     |
| RT EPIDIDYMIS     | 0.10     | 0.021 | SKIN                            | GROSS: RED MATTING                                      |      |                 |          |                |          |            |    | P     |
| LT EPIDIDYMIS     | 0.30     | 0.061 |                                 | NASAL                                                   |      |                 |          |                |          |            |    | P     |
| RT CAUDA EPID     | 0.1047   | 0.021 | LYMPH NODE, MAND                | GROSS: REDDENED                                         |      |                 |          |                |          |            |    | P     |
| LT CAUDA EPID     | 0.1216   | 0.025 |                                 | BILATERAL                                               |      |                 |          |                |          |            |    | P     |
| THYMUS GLAND      | 0.2151   | 0.044 | LYMPH NODE, MAND                | MICRO: HEMORRHAGE                                       |      |                 |          |                |          |            |    |       |
| ADRENAL GLANDS    | 0.0526   | 0.011 | TESTES                          | CORRELATES WITH GROSS REDNESS                           |      |                 |          |                |          |            |    | 2     |
| THYROIDS/PARA     | 0.0138   | 0.003 |                                 |                                                         |      |                 |          |                |          |            |    | P     |
| FINAL BODY WT (G) | 4.92.    |       | TESTES                          | GROSS: SOFT                                             |      |                 |          |                |          |            |    | P     |
|                   |          |       |                                 | BILATERAL                                               |      |                 |          |                |          |            |    | P     |
|                   |          |       | THYMUS GLAND                    | MICRO: ATROPHY                                          |      |                 |          |                |          |            |    | 1     |
|                   |          |       | RT TESTIS                       | MICRO: DEGENERATION, SEMINIFEROUS TUBULES               |      |                 |          |                |          |            |    | 3     |
|                   |          |       | TAIL                            | CORRELATES WITH GROSS APPEARANCE OF SMALL AND SOFT      |      |                 |          |                |          |            |    |       |
|                   |          |       | TEETH                           | GROSS: BROWN MATTING BASE                               |      |                 |          |                |          |            |    | P     |
|                   |          |       |                                 | GROSS: MALIGNED UPPER INCISOR, BILATERAL                |      |                 |          |                |          |            |    | P     |
|                   |          |       | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS AORTA                             |      |                 |          |                |          |            |    | BRAIN |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.       | 43365 | GROUP | 1: | 0 | MG/KG/DAY | MALE             | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH:   | 07/27/00 | STUDY DAY:      | 92 | GRADE |
|------------------|-------|-------|----|---|-----------|------------------|----------------|----------|------------------|----------|-----------------|----|-------|
| CECUM            |       |       |    |   |           | COLON            |                |          | DUODENUM         |          | ESOPHAGUS       |    |       |
| EYES/OPTIC N.    |       |       |    |   |           | HEART            |                |          | ILEUM            |          | JEJUNUM         |    |       |
| KIDNEYS          |       |       |    |   |           | LIVER            |                |          | LYMPH NODE, MES  |          | LUNGS           |    |       |
| NERVE, SCIATIC   |       |       |    |   |           | PANCREAS         |                |          | RT EPIDIDYMIS    |          | LT EPIDIDYMIS   |    |       |
| RECTUM           |       |       |    |   |           | PITUITARY        |                |          | PROSTATE         |          | SAL. GLAND MAND |    |       |
| SEMINAL VESICLES |       |       |    |   |           | SKELLETAL MUSCLE |                |          | SPINAL CORD      |          | SPLEEN          |    |       |
| STOMACH          |       |       |    |   |           | THYMUS GLAND     |                |          | THYROID GLANDS   |          | RT TESTIS       |    |       |
| LT TESTIS        |       |       |    |   |           | TRACHEA          |                |          | VAS DEFERENS     |          | URINARY BLADDER |    |       |
| MICRO:AORTA      |       |       |    |   |           | STERNEBRAE       |                |          | BRAIN            |          | CECUM           |    |       |
| COLON            |       |       |    |   |           | DUODENUM         |                |          | ESOPHAGUS        |          | EYES/OPTIC N.   |    |       |
| HEART            |       |       |    |   |           | ILEUM            |                |          | JEJUNUM          |          | KIDNEYS         |    |       |
| LYMPH NODE, MES  |       |       |    |   |           | NERVE, SCIATIC   |                |          | LUNGS            |          | ADRENAL MEDULLA |    |       |
| PANCREAS         |       |       |    |   |           | PROSTATE         |                |          | STOMACH, NONGLD  |          | MARROW, STERN   |    |       |
| PROSTATE         |       |       |    |   |           | SKIN             |                |          | RECTUM           |          | PITUITARY       |    |       |
| TRACHEA          |       |       |    |   |           | TRACHEA          |                |          | SEMINAL VESICLES |          | SKELETAL MUSCLE |    |       |
|                  |       |       |    |   |           |                  |                |          | SPLIEEN          |          | THYROID GLANDS  |    |       |
|                  |       |       |    |   |           |                  |                |          | URINARY BLADDER  |          |                 |    |       |

GROSS GRADE CODE: 1 - SLIGHT, 2 - MODERATE, 3 - MARKED, P - PRESENT  
MICRO GRADE CODE: 1 - MINIMAL, 2 - MILD, 3 - MODERATE, 4 - SEVERE, P - PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43368 | GROUP    | 1:    | 0 MG/KG/DAY      | MALE                  | SCHEDULED EUTH                                           | 07/27/00 | DATE OF DEATH: | 07/27/00          | STUDY DAY: | 92 |
|-------------------|-------|----------|-------|------------------|-----------------------|----------------------------------------------------------|----------|----------------|-------------------|------------|----|
| ORGAN WEIGHT      |       | ABS. (G) | REL.  | HEART            | MICRO:                | CARDIOMYOPATHY                                           |          | BRAIN          |                   | GRADE      |    |
| BRAIN             |       | 1.97     | 0.325 | KIDNEYS          | MICRO:                | INFILTRATION, SUBACUTE                                   |          |                |                   |            | 1  |
| LIVER             |       | 16.13    | 2.657 |                  | MICRO:                | BASOPHILIC TUBULES                                       |          |                |                   |            | 2  |
| KIDNEYS           |       | 3.39     | 0.558 |                  |                       | CYST, CORTICAL                                           |          |                |                   |            | 2  |
| HEART             |       | 1.72     | 0.283 | LIVER            | MICRO:                | VACUOLATION, HEPATOCELLULAR                              |          |                |                   |            | 2  |
| SPLEEN            |       | 0.98     | 0.161 |                  | PAS STAIN, POSITIVE   |                                                          |          |                |                   |            | 2  |
| PROSTATE          |       | 1.12     | 0.185 |                  |                       | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT |          |                |                   |            | 1  |
| RT TESTIS         |       | 1.64     | 0.270 |                  | OIL RED O, POSITIVE   |                                                          |          |                |                   |            | 3  |
| LT TESTIS         |       | 1.69     | 0.278 |                  |                       | PERIPORTAL TO MIDZONAL                                   |          |                |                   |            |    |
| RT EPIDIDYMIS     |       | 0.72     | 0.119 | LUNGS            | MICRO:                | INFILTRATION, CHRONIC                                    |          |                |                   |            | 2  |
| LT EPIDIDYMIS     |       | 0.69     | 0.114 |                  |                       | HISTIOCYTOSIS, ALVEOLAR                                  |          |                |                   |            | 1  |
| RT CAUDA EPID     |       | 0.3268   | 0.054 | SKELETAL MUSCLE  | MICRO:                | DEGENERATION                                             |          |                |                   |            |    |
| LT CAUDA EPID     |       | 0.3562   | 0.059 | THYMUS GLAND     | MICRO:                | HEMORRHAGE                                               |          |                |                   |            | 1  |
| THYMUS GLAND      |       | 0.3374   | 0.056 |                  |                       | ATROPHY                                                  |          |                |                   |            | 2  |
| ADRENAL GLANDS    |       | 0.0534   | 0.009 | THYROID GLANDS   | MICRO:                | ATROPHY                                                  |          |                |                   |            | 1  |
| THYROIDS/ PARA    |       | 0.0254   | 0.004 | NO SIGNIFICANT   |                       |                                                          |          |                |                   |            | 2  |
| FINAL BODY WT (G) |       |          | 607.  | CHANGES OBSERVED | GROSS: ADRENAL GLANDS | AORTA                                                    |          | STERNEBRAE     | BRAIN             |            |    |
|                   |       |          |       |                  | CECUM                 | COLON                                                    |          | DUODENUM       | ESOPHAGUS         |            |    |
|                   |       |          |       |                  | EYES/OPTIC N.         | HEART                                                    |          | ILEUM          | JEJUNUM           |            |    |
|                   |       |          |       |                  | KIDNEYS               | LIVER                                                    |          | LYMPH NODE     | MES               |            |    |
|                   |       |          |       |                  | NERVE, SCIATIC        | PANCREAS                                                 |          | RT EPIDIDYMIS  | LT EPIDIDYMIS     |            |    |
|                   |       |          |       |                  | RECTUM                | PITUITARY                                                |          | PROSTATE       | SAL. GLAND MAND   |            |    |
|                   |       |          |       |                  | SEMINAL VESICLES      | SKELETAL MUSCLE                                          |          | SKIN           | SPINAL CORD       |            |    |
|                   |       |          |       |                  | SPLEEN                | STOMACH                                                  |          | LYMPH NODE,    | MAND THYMUS GLAND |            |    |
|                   |       |          |       |                  | THYROID GLANDS        | RT TESTIS                                                |          | LT TESTIS      | TRACHEA           |            |    |
|                   |       |          |       |                  | VAS DEFERENS          | URINARY BLADDER                                          |          |                |                   |            |    |
|                   |       |          |       |                  | MICRO: AORTA          | STERNEBRAE                                               |          | BRAIN          | CECUM             |            |    |
|                   |       |          |       |                  | COLON                 | DUODENUM                                                 |          | ESOPHAGUS      | EYES/OPTIC N.     |            |    |
|                   |       |          |       |                  | ILEUM                 | JEJUNUM                                                  |          | LYMPH NODE     | MES               |            |    |
|                   |       |          |       |                  | ADRENAL MEDULLA       | NERVE, SCATIAC                                           |          | STOMACH, GLD   | ADRENAL CORTEX    |            |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43368 | GROUP | 1: | 0 MG/KG/DAY | MALE                                                                               | SCHEDULED EUTH                             | 07/27/00                                          | DATE OF DEATH:                                             | 07/27/00 | STUDY DAY: | 92 | GRADE |
|------------|-------|-------|----|-------------|------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------|------------------------------------------------------------|----------|------------|----|-------|
|            |       |       |    |             | MARROW, STERN<br>RECTUM<br>SEMINAL VESICLES<br>LYMPH NODE, MAND<br>URINARY BLADDER | PANCREAS<br>PITUITARY<br>SKIN<br>RT TESTIS | PARATHYROID<br>PROSTATE<br>SPINAL CORD<br>TRACHEA | RT EPIDIDYMIS<br>SAL. GLAND MAND<br>SPLEEN<br>VAS DEFERENS |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43369    | GROUP | 1 :              | 0 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH:                    | 07/26/00                           | STUDY DAY:      | 91              | GRADE |
|-------------------|----------|-------|------------------|-------------|------|----------------|----------|-----------------------------------|------------------------------------|-----------------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | HEART            |             |      |                |          | MICRO:                            | CARDIOMYOPATHY                     |                 |                 |       |
| BRAIN             | 2.09     | 0.403 | LIVER            |             |      |                |          | MICRO:                            | INFLAMMATION, SUBACUTE             |                 |                 | 1     |
| LIVER             | 14.68    | 2.829 |                  |             |      |                |          | PAS STAIN,                        | POSITIVE                           |                 |                 | 1     |
| KIDNEYS           | 3.34     | 0.644 |                  |             |      |                |          | MOSTLY CENTRILOBULAR;             | STAIN LOST WITH DIASTASE TREATMENT |                 |                 | 1     |
| HEART             | 1.47     | 0.283 |                  |             |      |                |          | OIL RED O,                        | POSITIVE                           |                 |                 | 2     |
| SPLEEN            | 0.85     | 0.164 | LUNGS            |             |      |                |          | PERIPORTAL TO MILZONAL            |                                    |                 |                 |       |
| PROSTATE          | 0.94     | 0.181 | PROSTATE         |             |      |                |          | MINERALIZATION, VASCULAR          |                                    |                 |                 |       |
| RT TESTIS         | 1.62     | 0.312 | LYMPH NODE, MAND |             |      |                |          | MICRO:                            | INFILTRATION, SUBACUTE             |                 |                 | 1     |
| LT TESTIS         | 1.54     | 0.297 | LYMPH NODE       |             |      |                |          | GROSS:                            | ENLARGED                           |                 |                 | 1     |
| RT EPIDIDYMIS     | 0.70     | 0.135 |                  |             |      |                |          | BILATERAL                         |                                    |                 |                 | P     |
| LT EPIDIDYMIS     | 0.53     | 0.102 | LYMPH NODE, MAND |             |      |                |          | MICRO:                            | PLASMACYTOSIS, MEDULLARY           |                 |                 |       |
| RT CAUDA EPID     | 0.2843   | 0.055 |                  |             |      |                |          | CORRELATES WITH GROSS ENLARGEMENT |                                    |                 |                 | 3     |
| LT CAUDA EPID     | 0.2564   | 0.049 | THYMUS GLAND     |             |      |                |          | MICRO:                            | HEMORRHAGE                         |                 |                 | 2     |
| THYMUS GLAND      | 0.3230   | 0.062 |                  |             |      |                |          | ATROPHY                           |                                    |                 |                 |       |
| ADRENAL GLANDS    | 0.0457   | 0.009 | NO SIGNIFICANT   |             |      |                |          | GROSS:                            | ADRENAL GLANDS                     | AORTA           | STERNEBRAE      |       |
| THYROIDS/PARA     | 0.0217   | 0.004 | CHANGES OBSERVED |             |      |                |          | CECUM                             | COLON                              | DUODENUM        | BRAIN           |       |
| FINAL BODY WT (G) | 519.     |       |                  |             |      |                |          | EYES/OPTIC N.                     | HEART                              | ILEUM           | ESOPHAGUS       |       |
|                   |          |       |                  |             |      |                |          | KIDNEYS                           | LIVER                              | LYMPH NODE, MES | JEJUNUM         |       |
|                   |          |       |                  |             |      |                |          | NERVE, SCIATIC                    | PANCREAS                           | LT EPIDIDYMIS   | LUNGS           |       |
|                   |          |       |                  |             |      |                |          | RECTUM                            | PITUITARY                          | PROSTATE        | SAL. GLAND MAND |       |
|                   |          |       |                  |             |      |                |          | SEMINAL VESICLES                  | SKELETAL MUSCLE                    | SKIN            | SPINAL CORD     |       |
|                   |          |       |                  |             |      |                |          | SPLEEN                            | STOMACH                            | THYMUS GLAND    | THYROID GLANDS  |       |
|                   |          |       |                  |             |      |                |          | RT TESTIS                         | LT TESTIS                          | TRACHEA         | VAS DEFERENS    |       |
|                   |          |       |                  |             |      |                |          | URINARY BLADDER                   |                                    |                 |                 |       |
|                   |          |       |                  |             |      |                |          | MICRO: AORTA                      | STERNEBRAE                         | BRAIN           | CECUM           |       |
|                   |          |       |                  |             |      |                |          | COLON                             | DUODENUM                           | ESOPHAGUS       | EYES/OPTIC N.   |       |
|                   |          |       |                  |             |      |                |          | ILEUM                             | JEJUNUM                            | KIDNEYS         | LYMPH NODE, MES |       |
|                   |          |       |                  |             |      |                |          | ADRENAL CORTEX                    | ADRENAL MEDULLA                    | NERVE, SCIATIC  | STOMACH, GLD    |       |

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

ANIMAL NO A32269 CEDDID 1.0 MC/VC/DAV

|                  |                  |           | GRADE           |
|------------------|------------------|-----------|-----------------|
| STOMACH, NONGLD  | MARROW, STERN    | PANCREAS  | PARATHYROID     |
| RT EPIDIDYMIS    | RECTUM           | PITUITARY | SAL. GLAND MAND |
| SEMINAL VESICLES | SKELLETAL MUSCLE | SKIN      | SPINAL CORD     |
| SPLIEEN          | THYROID GLANDS   | RT TESTIS | TRACHEA         |
| VAS DEFERENS     | URINARY BLADDER  |           |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.     | 43379    | GROUP | 1:                | 0 MG/KG/DAY      | MALE                                                    | SCHEDULED EUTH                                          | 07/26/00         | DATE OF DEATH: 07/26/00 | STUDY DAY: 91 | GRADE |
|----------------|----------|-------|-------------------|------------------|---------------------------------------------------------|---------------------------------------------------------|------------------|-------------------------|---------------|-------|
| ORGAN WEIGHT   | ABS. (G) | REL.  | HEART             | KIDNEYS          | MICRO: CARDIOMYOPATHY                                   | MICRO: INFILTRATION, SUBACUTE                           | 1                |                         |               |       |
| BRAIN          | 2.04     | 0.383 | LIVER             | LIVER            | MICRO: INFILTRATION, SUBACUTE                           | MICRO: INFILTRATION, SUBACUTE                           | 2                |                         |               |       |
| LIVER          | 14.94    | 2.803 | KIDNEYS           | KIDNEYS          | MICRO: VACUOLATION, HEPATOCELLULAR                      | PAS STAIN, NEGATIVE                                     | 1                |                         |               |       |
| KIDNEYS        | 3.34     | 0.627 | HEART             | HEART            | OIL RED O, POSITIVE                                     | OIL RED O, POSITIVE                                     | 1                |                         |               |       |
| HEART          | 1.63     | 0.306 | SPLEEN            | SPLEEN           | PERIORTAL TO MIZZONAL                                   | PERIORTAL TO MIZZONAL                                   | 2                |                         |               |       |
| SPLEEN         | 0.69     | 0.129 | PROSTATE          | PROSTATE         | MICRO: INFLAMMATION, CHRONIC                            | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  | 2                |                         |               |       |
| PROSTATE       | 1.08     | 0.203 | RT TESTIS         | RT TESTIS        | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION | 2                |                         |               |       |
| RT TESTIS      | 1.92     | 0.360 | LT TESTIS         | LT TESTIS        | MICRO: INFILTRATION, SUBACUTE                           | MICRO: INFILTRATION, SUBACUTE                           | 2                |                         |               |       |
| LT TESTIS      | 1.94     | 0.364 | PARATHYROID       | PARATHYROID      | MICRO: PLASMACYTOSIS, MEDULLARY                         | MICRO: PLASMACYTOSIS, MEDULLARY                         | 1                |                         |               |       |
| RT EPIDIDYMIS  | 0.82     | 0.154 | PROSTATE          | PROSTATE         | MICRO: HEMORRHAGE                                       | MICRO: HEMORRHAGE                                       | 1                |                         |               |       |
| LT EPIDIDYMIS  | 0.66     | 0.124 | LYMPH NODE, MAND  | LYMPH NODE, MAND | MICRO: CYST, ULTIMOBRANCHIAL                            | MICRO: CYST, ULTIMOBRANCHIAL                            | 2                |                         |               |       |
| RT CAUDA EPID  | 0.3798   | 0.071 | THYMUS GLAND      | THYMUS GLAND     | GROSS: ADRENAL GLANDS                                   | AORTA                                                   | STERNEBRAE       | BRAIN                   |               |       |
| LT CAUDA EPID  | 0.2956   | 0.055 | THYROID GLANDS    | THYROID GLANDS   | CECUM                                                   | COLON                                                   | DUODENUM         | ESOPHAGUS               |               |       |
| THYMUS GLAND   | 0.3212   | 0.060 | NO SIGNIFICANT    | NO SIGNIFICANT   | EYES/OPTIC N.                                           | HEART                                                   | ILEUM            | JEJUNUM                 |               |       |
| ADRENAL GLANDS | 0.0461   | 0.009 | CHANGES OBSERVED  | CHANGES OBSERVED | KIDNEYS                                                 | LIVER                                                   | LYMPH NODE, MES  | LUNGS                   |               |       |
| THYROIDS/PARA  | 0.0262   | 0.005 | FINAL BODY WT (G) | 533.             | NERVE, SCITATIC                                         | PANCREAS                                                | RT EPIDIDYMIS    | LT EPIDIDYMIS           |               |       |
|                |          |       |                   |                  | RECTUM                                                  | PITUITARY                                               | PROSTATE         | SAL. GLAND MAND         |               |       |
|                |          |       |                   |                  | SEMINAL VESICLES                                        | SKELLETAL MUSCLE                                        | SKIN             | SPINAL CORD             |               |       |
|                |          |       |                   |                  | SPLEEN                                                  | STOMACH                                                 | LYMPH NODE, MAND | THYMUS GLAND            |               |       |
|                |          |       |                   |                  | THYROID GLANDS                                          | RT TESTIS                                               | LT TESTIS        | TRACHEA                 |               |       |
|                |          |       |                   |                  | VAS DEFERENS                                            | URINARY BLADDER                                         |                  |                         |               |       |
|                |          |       |                   |                  | MICRO: AORTA                                            | STERNEBRAE                                              | BRAIN            | CECUM                   |               |       |
|                |          |       |                   |                  | COLON                                                   | DUODENUM                                                | ESOPHAGUS        | EYES/OPTIC N.           |               |       |
|                |          |       |                   |                  | ILEUM                                                   | JEJUNUM                                                 | LYMPH NODE, MES  | ADRENAL CORTEX          |               |       |
|                |          |       |                   |                  | ADRENAL MEDULLA                                         | NERVE, SCITATIC                                         | STOMACH, GLD     | STOMACH, NONGLD         |               |       |
|                |          |       |                   |                  | MARROW, STERN                                           | PANCREAS                                                | PARTHYROID       | RT EPIDIDYMIS           |               |       |

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.      | 43379 | GROUP | 1 : | 0 MG/KG/DAY | MALE      | SCHEDULED EUTH | 07/26/00        | DATE OF DEATH:   | 07/26/00 | STUDY DAY: | 91 |
|-----------------|-------|-------|-----|-------------|-----------|----------------|-----------------|------------------|----------|------------|----|
| GRADE           |       |       |     |             |           |                |                 |                  |          |            |    |
| RECTUM          |       |       |     |             | PITUITARY |                | SAL. GLAND MAND | SEMINAL VESICLES |          |            |    |
| SKELETAL MUSCLE |       |       |     |             | SKIN      |                | SPINAL CORD     | SPLEEN           |          |            |    |
| RT TESTIS       |       |       |     |             | TRACHEA   |                | VAS DEFERENS    | URINARY BLADDER  |          |            |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT



PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43391 | GROUP | 1: | 0 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:                                     | 07/28/00  | STUDY DAY:   | 93 | GRADE |
|------------|-------|-------|----|-------------|------|----------------|----------|----------------------------------------------------|-----------|--------------|----|-------|
|            |       |       |    |             |      |                |          | LYMPH NODE, MAND THYROID GLANDS<br>URINARY BLADDER | RT TESTIS | VAS DEFERENS |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 20

| ANIMAL NO.        | 43342    | GROUP | 2 : 100 MG/KG/DAY | MALE                                                | SCHEDULED EUTH            | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: 93 | GRADE |
|-------------------|----------|-------|-------------------|-----------------------------------------------------|---------------------------|----------|----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | GENERAL COMMENT   | GROSS:                                              | ORGAN DAMAGED AT NEUROPSY |          |                |          |               | P     |
| BRAIN             | 2.10     | 0.399 |                   | MICRO:                                              | PITUITARY                 |          |                |          |               |       |
| LIVER             | 14.65    | 2.785 | LIVER             | VACUOLATION, HEPATOCELLULAR                         |                           |          |                |          |               | 1     |
| KIDNEYS           | 3.88     | 0.738 | LUNGS             | WHITE AREA(S)                                       |                           |          |                |          |               | P     |
| HEART             | 1.66     | 0.316 | LUNGS             | MULTIPLE, IRREGULARLY SHAPED, ALL LOBES             |                           |          |                |          |               |       |
| SPLEEN            | 0.72     | 0.137 | LUNGS             | MICRO: INFILTRATION, CHRONIC                        |                           |          |                |          |               | 2     |
| PROSTATE          | 1.00     | 0.190 |                   | CORRELATES WITH GROSS WHITE AREAS                   |                           |          |                |          |               |       |
| RT TESTIS         | 1.67     | 0.317 |                   | HISTIOCYTOSIS, ALVEOLAR                             |                           |          |                |          |               | 2     |
| LT TESTIS         | 1.59     | 0.302 |                   | CORRELATES WITH GROSS WHITE AREAS                   |                           |          |                |          |               |       |
| RT EPIDIDYMIS     | 0.71     | 0.135 |                   | INFLAMMATION, GRANULOMATOUS                         |                           |          |                |          |               | 2     |
| LT EPIDIDYMIS     | 0.67     | 0.127 | SKIN              | MASS                                                |                           |          |                |          |               | P     |
| RT CAUDA EPID     | 0.3081   | 0.059 |                   | 7 X 5 X 5 MM, GREEN, LOWER LIP, MASS #1             |                           |          |                |          |               |       |
| LT CAUDA EPID     | 0.2779   | 0.053 | SKIN              | MICRO: INFILTRATION, CHRONIC ACTIVE                 |                           |          |                |          |               | 3     |
| THYMUS GLAND      | 0.3675   | 0.070 |                   | FOCAL IN DEEP DERMIS, SUBCUTIS AND SKELETAL MUSCLE; |                           |          |                |          |               |       |
| ADRENAL GLANDS    | 0.0597   | 0.011 |                   | CORRELATES WITH MASS #1                             |                           |          |                |          |               |       |
| THYROIDS/PARA     | 0.0483   | 0.009 | NO SIGNIFICANT    |                                                     |                           |          |                |          |               |       |
| FINAL BODY WT (G) | 526.     |       | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS                               | AORTA                     |          |                |          |               |       |
|                   |          |       |                   | CECUM                                               | COLON                     |          |                |          |               |       |
|                   |          |       |                   | EYES/OPTIC N.                                       | HEART                     |          |                |          |               |       |
|                   |          |       |                   | KIDNEYS                                             | LIVER                     |          |                |          |               |       |
|                   |          |       |                   | PANCREAS                                            | RT EPIDIDYMIS             |          |                |          |               |       |
|                   |          |       |                   | PITUITARY                                           | PROSTATE                  |          |                |          |               |       |
|                   |          |       |                   | SKELETAL MUSCLE                                     | SPINAL CORD               |          |                |          |               |       |
|                   |          |       |                   | LYMPH NODE, MAND                                    | THYMUS GLAND              |          |                |          |               |       |
|                   |          |       |                   | LT TESTIS                                           | TRACHEA                   |          |                |          |               |       |
|                   |          |       |                   | MICRO: PROSTATE                                     | THYROID GLANDS            |          |                |          |               |       |
|                   |          |       |                   |                                                     | VAS DEFERENS              |          |                |          |               |       |
|                   |          |       |                   |                                                     | URINARY BLADDER           |          |                |          |               |       |

GROSS GRADE CODE: 1 - SLIGHT, 2 - MODERATE, 3 - MARKED, P - PRESENT  
MICRO GRADE CODE: 1 - MINIMAL, 2 - MILD, 3 - MODERATE, 4 - SEVERE, P - PRESENT

TABLE 1.20 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO :WIL-1886012  
SPONSOR :CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43350 | GROUP | 2: 100 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|------------|-------|-------|------------------|------|----------------|----------|----------------|----------|------------|----|-------|
|            |       |       |                  |      |                |          |                |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.                          | 43351    | GROUP | 2: 100 MG/KG/DAY                   | MALE                                | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92    |
|-------------------------------------|----------|-------|------------------------------------|-------------------------------------|----------------|----------|----------------|----------|------------|-------|
| ORGAN WEIGHT                        | ABS. (G) | REL.  | LIVER                              | MICRO: INFLAMMATION, SUBACUTE       |                |          |                |          |            | GRADE |
| BRAIN                               | 2.07     | 0.405 | PROSTATE                           | MICRO: INFLAMMATION, CHRONIC ACTIVE |                |          |                |          |            | 1     |
| LIVER                               | 15.29    | 2.992 | THYROID GLANDS                     | MICRO: HYPERTROPHY, FOLLICULAR CELL |                |          |                |          |            | 1     |
| KIDNEYS                             | 3.41     | 0.667 | NO SIGNIFICANT<br>CHANGES OBSERVED |                                     |                |          |                |          |            | 1     |
| HEART                               | 1.51     | 0.295 |                                    |                                     |                |          |                |          |            |       |
| SPLEEN                              | 0.74     | 0.145 |                                    |                                     |                |          |                |          |            |       |
| PROSTATE                            | 1.03     | 0.202 |                                    |                                     |                |          |                |          |            |       |
| RT TESTIS                           | 1.54     | 0.301 |                                    |                                     |                |          |                |          |            |       |
| LT TESTIS                           | 1.58     | 0.309 |                                    |                                     |                |          |                |          |            |       |
| RT EPIDIDYMIS                       | 0.66     | 0.129 |                                    |                                     |                |          |                |          |            |       |
| LT EPIDIDYMIS                       | 0.65     | 0.127 |                                    |                                     |                |          |                |          |            |       |
| RT CAUDA EPID                       | 0.2477   | 0.048 |                                    |                                     |                |          |                |          |            |       |
| LT CAUDA EPID                       | 0.2773   | 0.054 |                                    |                                     |                |          |                |          |            |       |
| THYMUS GLAND                        | 0.2458   | 0.048 |                                    |                                     |                |          |                |          |            |       |
| ADRENAL GLANDS                      | 0.0581   | 0.011 |                                    |                                     |                |          |                |          |            |       |
| THYROIDS/ PARA<br>FINAL BODY WT (G) | 0.0232   | 0.005 | 511.                               | MICRO: LUNGS                        |                |          |                |          |            |       |

PAGE 23

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43354    | GROUP | 2 : 100 MG/KG/DAY                  | MALE                                                                            | SCHEDULED EUTH                                                                                                                                                                                        | 07/28/00                                                                                                                                    | DATE OF DEATH:                                                                                                                                     | 07/28/00 | STUDY DAY: | 93 |
|-------------------|----------|-------|------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                              | MICRO: INFLAMMATION, SUBACUTE<br>THYROID GLANDS<br>MICRO: CYST, ULTIMOBRANCHIAL | GROSS: ADRENAL GLANDS<br>AORTA<br>CECUM<br>COLON<br>EYES/OPTIC N.<br>HEART<br>KIDNEYS<br>LIVER<br>PANCREAS<br>RECTUM<br>SPLENIC VESICLES<br>STOMACH<br>THYROID GLANDS<br>VAS DEFERENS<br>MICRO: LUNGS | STERNEBRAE<br>DUODENUM<br>ILEUM<br>LYMPH NODE, MES<br>RT EPIDIDYMIS<br>PROSTATE<br>SKIN<br>STOMACH<br>TESTIS<br>URINARY BLADDER<br>PROSTATE | BRAIN<br>ESOPHAGUS<br>JEJUNUM<br>LUNGS<br>LT EPIDIDYMIS<br>PROSTATE<br>SAL. GLAND MAND<br>SPINAL CORD<br>MAND THYMUS GLAND<br>LT TESTIS<br>TRACHEA | GRADE    |            |    |
| BRAIN             | 2.03     | 0.430 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            | 1  |
| LIVER             | 15.99    | 3.388 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            | 1  |
| KIDNEYS           | 3.28     | 0.695 | NO SIGNIFICANT<br>CHANGES OBSERVED |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            | 1  |
| HEART             | 1.56     | 0.331 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| SPLEEN            | 0.94     | 0.199 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| PROSTATE          | 1.00     | 0.212 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| RT TESTIS         | 1.75     | 0.371 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| LT TESTIS         | 1.77     | 0.375 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| RT EPIDIDYMIS     | 0.72     | 0.153 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| LT EPIDIDYMIS     | 0.73     | 0.155 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| RT CAUDA EPID     | 0.3194   | 0.068 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| LT CAUDA EPID     | 0.3291   | 0.070 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| THYMUS GLAND      | 0.2582   | 0.055 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| ADRENAL GLANDS    | 0.0510   | 0.011 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| THYROID GLANDS    | 0.0253   | 0.005 |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |
| FINAL BODY WT (G) |          | 4.72. |                                    |                                                                                 |                                                                                                                                                                                                       |                                                                                                                                             |                                                                                                                                                    |          |            |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 25

| ANIMAL NO.        | 43364    | GROUP | 2: 100 MG/KG/DAY                   | MALE                                | SCHEDULED EUTH   | 07/26/00        | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|------------------------------------|-------------------------------------|------------------|-----------------|----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                              | MICRO: VACUOLATION, HEPATOCELLULAR  |                  |                 |                |          |               |       |
| BRAIN             | 1.95     | 0.381 | PROSTATE                           | MICRO: INFILTRATION, CHRONIC ACTIVE |                  |                 |                |          |               | 2     |
| LIVER             | 16.63    | 3.248 | THYROID GLANDS                     | MICRO: CYST, ULTIMOBRANCHIAL        |                  |                 |                |          |               | 1     |
| KIDNEYS           | 3.49     | 0.682 | NO SIGNIFICANT<br>CHANGES OBSERVED |                                     |                  |                 |                |          |               | 1     |
| HEART             | 1.60     | 0.313 | GROSS: ADRENAL GLANDS              | AORTA                               | STERNEBRAE       | BRAIN           |                |          |               |       |
| SPLEEN            | 0.65     | 0.127 | CECUM                              | COLON                               | DUODENUM         | ESOPHAGUS       |                |          |               |       |
| PROSTATE          | 1.04     | 0.203 | EYES/OPTIC N.                      | HEART                               | ILEUM            | JEJUNUM         |                |          |               |       |
| RT TESTIS         | 1.17     | 0.229 | KIDNEYS                            | LIVER                               | LYMPH NODE, MES  | LUNGS           |                |          |               |       |
| LT TESTIS         | 1.34     | 0.262 | NERVE, SCIATIC                     | PANCREAS                            | RT EPIDIDYMIS    | LT EPIDIDYMIS   |                |          |               |       |
| RT EPIDIDYMIS     | 0.63     | 0.123 | RECTUM                             | PITUITARY                           | PROSTATE         | SAL. GLAND MAND |                |          |               |       |
| LT EPIDIDYMIS     | 0.57     | 0.111 | SEMINAL VESICLES                   | SKIN                                | SPERMATE         | SPINAL CORD     |                |          |               |       |
| RT CAUDA EPID     | 0.2760   | 0.054 | SPLEEN                             | STOMACH                             | SEMINAL VESICLES | SPINAL CORD     |                |          |               |       |
| LT CAUDA EPID     | 0.2661   | 0.052 | THYROID GLANDS                     | RT TESTIS                           | STOMACH          | SPINAL CORD     |                |          |               |       |
| THYMUS GLAND      | 0.2435   | 0.048 | VAS DEFERENS                       | URINARY BLADDER                     | RT TESTIS        | SPINAL CORD     |                |          |               |       |
| ADRENAL GLANDS    | 0.0637   | 0.012 | MICRO: LUNGS                       |                                     | URINARY BLADDER  | SPINAL CORD     |                |          |               |       |
| THYROIDS/PARA     | 0.0249   | 0.005 |                                    |                                     |                  |                 |                |          |               |       |
| FINAL BODY WT (G) | 512.     |       |                                    |                                     |                  |                 |                |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 26

| ANIMAL NO.     | 43371    | GROUP | 2 : 100 MG/KG/DAY | MALE                                                                                         | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: 92 | GRADE |
|----------------|----------|-------|-------------------|----------------------------------------------------------------------------------------------|----------------|----------|----------------|----------|---------------|-------|
| ORGAN WEIGHT   | ABS. (G) | REL.  | LIVER             | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR                                    |                |          |                |          |               | 1     |
| BRAIN          | 2.07     | 0.378 | LIVER             | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| LIVER          | 18.70    | 3.419 | LUNGS             | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| KIDNEYS        | 3.95     | 0.722 | HEART             | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| HEART          | 1.58     | 0.289 | SPLEEN            | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| SPLEEN         | 0.63     | 0.115 | PROSTATE          | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| PROSTATE       | 1.07     | 0.196 | RT TESTIS         | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| RT TESTIS      | 1.64     | 0.300 | LT TESTIS         | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| LT TESTIS      | 1.63     | 0.298 | RT EPIDIDYMIS     | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| RT EPIDIDYMIS  | 0.70     | 0.128 | LT EPIDIDYMIS     | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| LT EPIDIDYMIS  | 0.67     | 0.122 | RT CAUDA EPID     | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| RT CAUDA EPID  | 0.2939   | 0.054 | LT CAUDA EPID     | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| LT CAUDA EPID  | 0.2888   | 0.053 | THYMUS GLAND      | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| THYMUS GLAND   | 0.4153   | 0.076 | ADRENAL GLANDS    | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| ADRENAL GLANDS | 0.0632   | 0.012 | THYROIDS/PARA     | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |
| THYROIDS/PARA  | 0.0383   | 0.007 | FINAL BODY WT (G) | MICRO: INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |               | 1     |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43380    | GROUP | 2: 100 MG/KG/DAY                   | MALE                           | SCHEDULED EUTH. | 07/26/00         | DATE OF DEATH:  | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|------------------------------------|--------------------------------|-----------------|------------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                              | MICRO: INFLAMMATION, SUBACUTE  |                 |                  |                 |          |               |       |
| BRAIN             | 2.08     | 0.371 | LUNGS                              | MICRO: HISTIOCYTOSIS, ALVEOLAR |                 |                  |                 |          |               |       |
| LIVER             | 17.69    | 3.153 | PROSTATE                           | MICRO: INFLAMMATION, SUBACUTE  |                 |                  |                 |          |               |       |
| KIDNEYS           | 3.26     | 0.581 | NO SIGNIFICANT<br>CHANGES OBSERVED | GROSS: ADRENAL GLANDS          | AORTA           | STERNEBRAE       | BRAIN           |          |               |       |
| HEART             | 1.56     | 0.278 |                                    | CECUM                          | COLON           | DUODENUM         | ESOPHAGUS       |          |               |       |
| SPLEEN            | 0.77     | 0.137 |                                    | EYES/OPTIC N.                  | HEART           | ILEUM            | JEJUNUM         |          |               |       |
| PROSTATE          | 0.64     | 0.114 |                                    | KIDNEYS                        | LIVER           | LYMPH NODE, MES  | LUNGS           |          |               |       |
| RT TESTIS         | 1.69     | 0.301 |                                    | NERVE, SCIATIC                 | PANCREAS        | RT EPIDIDYMIS    | LT EPIDIDYMIS   |          |               |       |
| LT TESTIS         | 1.76     | 0.314 |                                    | RECTUM                         | PITUITARY       | PROSTATE         | SAL. GLAND MAND |          |               |       |
| RT EPIDIDYMIS     | 0.73     | 0.130 |                                    | SEMINAL VESICLES               | SKIN            | SPINAL CORD      | SPINAL CORD     |          |               |       |
| LT EPIDIDYMIS     | 0.69     | 0.123 |                                    | SPLEEN                         | STOMACH         | LYMPH NODE, MAND | THYMUS GLAND    |          |               |       |
| RT CAUDA EPID     | 0.3300   | 0.059 |                                    | THYROID GLANDS                 | RT TESTIS       | LT TESTIS        | TRACHEA         |          |               |       |
| LT CAUDA EPID     | 0.3279   | 0.058 |                                    | VAS DEFERENS                   | URINARY BLADDER |                  |                 |          |               |       |
| THYMUS GLAND      | 0.2859   | 0.051 |                                    | MICRO: THYROID GLANDS          |                 |                  |                 |          |               |       |
| ADRENAL GLANDS    | 0.0613   | 0.011 |                                    |                                |                 |                  |                 |          |               |       |
| THYROIDS/ PARA    | 0.0267   | 0.005 |                                    |                                |                 |                  |                 |          |               |       |
| FINAL BODY WT (G) |          | 561.  |                                    |                                |                 |                  |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43382    | GROUP | 2: 100 MG/KG/DAY | MALE                          | SCHEDULED EUTH   | 07/27/00         | DATE OF DEATH:  | 07/27/00 | STUDY DAY: 92 | GRADE |
|-------------------|----------|-------|------------------|-------------------------------|------------------|------------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE |                  |                  |                 |          |               | 1     |
| BRAIN             | 2.05     | 0.384 | NO SIGNIFICANT   |                               |                  |                  |                 |          |               |       |
| LIVER             | 15.98    | 2.993 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE       | BRAIN           |          |               |       |
| KIDNEYS           | 3.62     | 0.678 |                  | CECUM                         | COLON            | DUODENUM         | ESOPHAGUS       |          |               |       |
| HEART             | 1.50     | 0.281 |                  | EYES/OPTIC N.                 | HEART            | ILEUM            | JEJUNUM         |          |               |       |
| SPLEEN            | 0.63     | 0.118 |                  | KIDNEYS                       | LIVER            | LYMPH NODE, MES  | LUNGS           |          |               |       |
| PROSTATE          | 0.85     | 0.159 |                  | NERVE, SCIATIC                | PANCREAS         | RT EPIDIDYMIS    | LT EPIDIDYMIS   |          |               |       |
| RT TESTIS         | 1.86     | 0.348 |                  | RECTUM                        | PITUITARY        | PROSTATE         | SAL. GLAND MAND |          |               |       |
| LT TESTIS         | 1.90     | 0.356 |                  | SEMINAL VESICLES              | SKELLETAL MUSCLE | SPINAL CORD      |                 |          |               |       |
| RT EPIDIDYMIS     | 0.71     | 0.133 |                  | SPLEEN                        | STOMACH          | LYMPH NODE, MAND | THYMUS GLAND    |          |               |       |
| LT EPIDIDYMIS     | 0.76     | 0.142 |                  | THYROID GLANDS                | RT TESTIS        | LT TESTIS        | TRACHEA         |          |               |       |
| RT CAUDA EPID     | 0.2990   | 0.056 |                  | VAS DEFERENS                  | URINARY BLADDER  |                  |                 |          |               |       |
| LT CAUDA EPID     | 0.3319   | 0.062 |                  | MICRO: LUNGS                  | PROSTATE         | THYROID GLANDS   |                 |          |               |       |
| THYMUS GLAND      | 0.2613   | 0.049 |                  |                               |                  |                  |                 |          |               |       |
| ADRENAL GLANDS    | 0.0545   | 0.010 |                  |                               |                  |                  |                 |          |               |       |
| THYROIDS/PARA     | 0.0240   | 0.004 |                  |                               |                  |                  |                 |          |               |       |
| FINAL BODY WT (G) | 534.     |       |                  |                               |                  |                  |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 29

| ANIMAL NO.        | 43384    | GROUP | 2: 100 MG/KG/DAY | MALE | SCHEDULED EUTH                                            | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|------------------|------|-----------------------------------------------------------|----------|----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |      | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR |          |                |          |               | 1     |
| BRAIN             | 2.18     | 0.343 |                  |      | PERIORTAL TO MIZZONAL                                     |          |                |          |               | 1     |
| LIVER             | 22.53    | 3.542 |                  |      | MICRO: MINERALIZATION, VASCULAR                           |          |                |          |               | 1     |
| KIDNEYS           | 4.20     | 0.660 | LUNGS            |      | GROSS: MASS                                               |          |                |          |               | 1     |
| HEART             | 1.72     | 0.270 | PROSTATE         |      | MICRO: INFILTRATION, CHRONIC ACTIVE                       |          |                |          |               | 1     |
| SPLEEN            | 1.00     | 0.157 | SKIN             |      | 6 MM IN DIAMETER, TAN, LEFT LOWER LIP, MASS #1            |          |                |          |               | P     |
| PROSTATE          | 1.51     | 0.237 |                  |      | MICRO: INFILTRATION, CHRONIC ACTIVE                       |          |                |          |               | 1     |
| RT TESTIS         | 1.67     | 0.263 | SKIN             |      | FOCAL IN DEEP DERMIS, ACTIVE                              |          |                |          |               | 3     |
| LT TESTIS         | 1.69     | 0.266 |                  |      | CORRELATES WITH MASS #1                                   |          |                |          |               |       |
| RT EPIDIDYMIS     | 0.75     | 0.118 |                  |      |                                                           |          |                |          |               |       |
| LT EPIDIDYMIS     | 0.74     | 0.116 |                  |      |                                                           |          |                |          |               |       |
| RT CAUDA EPID     | 0.3498   | 0.055 |                  |      |                                                           |          |                |          |               |       |
| LT CAUDA EPID     | 0.3307   | 0.052 |                  |      |                                                           |          |                |          |               |       |
| THYMUS GLAND      | 0.2875   | 0.045 |                  |      |                                                           |          |                |          |               |       |
| ADRENAL GLANDS    | 0.0633   | 0.010 |                  |      |                                                           |          |                |          |               |       |
| THYROID/ PARA     | 0.0231   | 0.004 |                  |      |                                                           |          |                |          |               |       |
| FINAL BODY WT (G) | 636.     |       |                  |      |                                                           |          |                |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 30

| ANIMAL NO.        | 43386    | GROUP | 2: 100 MG/KG/DAY | MALE | SCHEDULED EUTH                      | 07/28/00         | DATE OF DEATH: | 07/28/00 | STUDY DAY: 93   | GRADE |
|-------------------|----------|-------|------------------|------|-------------------------------------|------------------|----------------|----------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |      | MICRO: INFILTRATION, SUBACUTE       |                  |                |          |                 |       |
| BRAIN             | 2.10     | 0.436 |                  |      | VACUOLATION, HEPATOCELLULAR         |                  |                |          |                 | 1     |
| LIVER             | 15.17    | 3.147 | LUNGS            |      | MICRO: MINERALIZATION, VASCULAR     |                  |                |          |                 | 1     |
| KIDNEYS           | 3.40     | 0.705 | PROSTATE         |      | MICRO: INFILTRATION, CHRONIC ACTIVE |                  |                |          |                 | 1     |
| HEART             | 1.37     | 0.284 | NO SIGNIFICANT   |      | GROSS: ADRENAL GLANDS               | AORTA            | STERNEBRAE     |          | BRAIN           |       |
| SPLEEN            | 0.73     | 0.151 | CHANGES OBSERVED |      | CECUM                               | COLON            | DUODENUM       |          | ESOPHAGUS       |       |
| PROSTATE          | 0.86     | 0.178 |                  |      | EYES/OPTIC N.                       | HEART            | ILEUM          |          | JEJUNUM         |       |
| RT TESTIS         | 1.58     | 0.328 |                  |      | KIDNEYS                             | LIVER            | LYMPH NODE     | MES      | LUNGS           |       |
| LT TESTIS         | 1.58     | 0.328 |                  |      | NERVE, SCUTATIC                     | PANCREAS         | RT EPIDIDYMIS  |          | LT EPIDIDYMIS   |       |
| RT EPIDIDYMIS     | 0.70     | 0.145 |                  |      | RECTUM                              | PITUITARY        | PROSTATE       |          | SAL. GLAND MAND |       |
| LT EPIDIDYMIS     | 0.69     | 0.143 |                  |      | SEMINAL VESICLES                    | SKELLETAL MUSCLE | SKIN           |          | SPINAL CORD     |       |
| RT CAUDA EPID     | 0.3322   | 0.069 |                  |      | SPLEEN                              | STOMACH          | LYMPH NODE     | MAND     | THYMUS GLAND    |       |
| LT CAUDA EPID     | 0.3283   | 0.068 |                  |      | THYROID GLANDS                      | RT TESTIS        | LT TESTIS      |          | TRACHEA         |       |
| ADRENAL GLANDS    | 0.3654   | 0.076 |                  |      | VAS DEFERENS                        | URINARY BLADDER  |                |          |                 |       |
| THYROIDS/PARA     | 0.0543   | 0.011 |                  |      | MICRO: THYROID GLANDS               |                  |                |          |                 |       |
| FINAL BODY WT (G) | 4.82     |       |                  |      |                                     |                  |                |          |                 |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

ANIMAL NO. 43386 GROUP 2: 100 MG/KG/DAY MALE SCHEDULED EUTH 07/28/00

DATE OF DEATH: 07/28/00 STUDY DAY: 93  
GRADE

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 32

| ANIMAL NO.        | 43323    | GROUP | 3 : 300 MG/KG/DAY | MALE                            | SCHEDULED EUTH  | 07/28/00        | DATE OF DEATH:    | 07/28/00 | STUDY DAY: 93 | GRADE |
|-------------------|----------|-------|-------------------|---------------------------------|-----------------|-----------------|-------------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             | MICRO: INFLAMMATION, SUBACUTE   |                 |                 |                   |          |               |       |
| BRAIN             | 2.06     | 0.478 | LUNGS             | MICRO: MINERALIZATION, VASCULAR |                 |                 |                   |          |               | 1     |
| LIVER             | 13.37    | 3.102 | THYROID GLANDS    | MICRO: CYST, ULTIMOBRANCHIAL    |                 |                 |                   |          |               | 1     |
| KIDNEYS           | 3.28     | 0.761 | NO SIGNIFICANT    |                                 |                 |                 |                   |          |               | 1     |
| HEART             | 1.30     | 0.302 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS           | AORTA           | STERNEBRAE      | BRAIN             |          |               |       |
| SPLEEN            | 0.71     | 0.165 |                   | CECUM                           | COLON           | DUODENUM        | ESOPHAGUS         |          |               |       |
| PROSTATE          | 1.08     | 0.251 |                   | EYES/OPTIC N.                   | HEART           | ILEUM           | JEJUNUM           |          |               |       |
| RT TESTIS         | 1.55     | 0.360 |                   | KIDNEYS                         | LIVER           | LYMPH NODE, MES | LUNGS             |          |               |       |
| LT TESTIS         | 1.57     | 0.364 |                   | NERVE, SCIATIC                  | PANCREAS        | RT EPIDIDYMIS   | LT EPIDIDYMIS     |          |               |       |
| RT EPIDIDYMIS     | 0.53     | 0.123 |                   | RECTUM                          | PITUITARY       | PROSTATE        | SAL. GLAND MAND   |          |               |       |
| LT EPIDIDYMIS     | 0.59     | 0.137 |                   | SEMINAL VESICLES                | SKIN            | SPERMATE        | SPINAL CORD       |          |               |       |
| RT CAUDA EPID     | 0.2434   | 0.056 |                   | SPLLEEN                         | STOMACH         | LYMPH NODE,     | MAND THYMUS GLAND |          |               |       |
| LT CAUDA EPID     | 0.2419   | 0.056 |                   | THYROID GLANDS                  | RT TESTIS       | LT TESTIS       | TRACHEA           |          |               |       |
| THYMUS GLAND      | 0.2237   | 0.052 |                   | VAS DEFERENS                    | URINARY BLADDER |                 |                   |          |               |       |
| ADRENAL GLANDS    | 0.0445   | 0.010 |                   |                                 |                 |                 |                   |          |               |       |
| THYROIDS/PARA     | 0.0370   | 0.009 |                   |                                 |                 |                 |                   |          |               |       |
| FINAL BODY WT (G) | 431.     |       |                   |                                 |                 |                 |                   |          |               |       |
| MICRO: PROSTATE   |          |       |                   |                                 |                 |                 |                   |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43331    | GROUP | 3: 300 MG/KG/DAY | MALE                  | SCHEDULED EUTH                                              | 07/26/00         | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91 | PAGE 33 |
|-------------------|----------|-------|------------------|-----------------------|-------------------------------------------------------------|------------------|----------------|----------|---------------|---------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO:                | VACUOLATION, HEPATOCELLULAR                                 |                  |                |          | GRADE         |         |
| BRAIN             | 1.97     | 0.367 |                  | MICRO:                | INFILTRATION, SUBACUTE                                      |                  |                |          | 2             |         |
| LIVER             | 16.47    | 3.067 | PROSTATE         | MICRO:                | INFILTRATION, SUBACUTE                                      |                  |                |          | 1             |         |
| KIDNEYS           | 3.52     | 0.655 | THYROID GLANDS   | MICRO:                | NO SIGNIFICANT CHANGES OBSERVED                             |                  |                |          | 1             |         |
| HEART             | 1.70     | 0.317 |                  |                       | ONLY SMALL PORTION OF THYROIDS EXAMINED; MOST NOT IN PLANE; |                  |                |          |               |         |
| SPLEEN            | 0.70     | 0.130 |                  |                       | RE CUT EVALUATED                                            |                  |                |          |               |         |
| PROSTATE          | 1.48     | 0.276 | NO SIGNIFICANT   |                       |                                                             |                  |                |          |               |         |
| RT TESTIS         | 1.69     | 0.315 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS | AORTA                                                       | STERNEBRAE       |                |          |               |         |
| LT TESTIS         | 1.58     | 0.294 |                  | CECUM                 | COLON                                                       | DUODENUM         | BRAIN          |          |               |         |
| RT EPIDIDYMIS     | 0.78     | 0.145 |                  | EYES/OPTIC N.         | HEART                                                       | ESOPHAGUS        | ESOPHAGUS      |          |               |         |
| LT EPIDIDYMIS     | 0.82     | 0.153 |                  | KIDNEYS               | LIVER                                                       | ILEUM            | JEJUNUM        |          |               |         |
| RT CAUDA EPID     | 0.3887   | 0.072 |                  | NERVE, SCIATIC        | PANCREAS                                                    | LYMPH NODE, MES  | LUNGS          |          |               |         |
| LT CAUDA EPID     | 0.3310   | 0.062 |                  | RECTUM                | PITUITARY                                                   | RT EPIDIDYMIS    | LT EPIDIDYMIS  |          |               |         |
| THYMUS GLAND      | 0.2640   | 0.049 |                  | SEMINAL VESICLES      | SKELETAL MUSCLE                                             | PROSTATE         | PROSTATE       |          |               |         |
| ADRENAL GLANDS    | 0.0421   | 0.008 |                  | SPLEEN                | STOMACH                                                     | SKIN             | SPINAL CORD    |          |               |         |
| THYROIDS/ PARA    | 0.0259   | 0.005 |                  | THYROID GLANDS        | RT TESTIS                                                   | LYMPH NODE, MAND | THYMUS GLAND   |          |               |         |
| FINAL BODY WT (G) | 537.     |       |                  | VAS DEFERENS          | URINARY BLADDER                                             | LT TESTIS        | TRACHEA        |          |               |         |
|                   |          |       |                  | MICRO:LUNGS           | THYROID GLANDS                                              |                  |                |          |               |         |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43341    | GROUP | 3: 300 MG/KG/DAY | MALE                                                     | SCHEDULED EUTH   | 07/27/00         | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 |
|-------------------|----------|-------|------------------|----------------------------------------------------------|------------------|------------------|----------------|----------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE                            |                  |                  |                |          | GRADE      |    |
| BRAIN             | 1.93     | 0.360 | LUNGS            | MICRO: MINERALIZATION, VASCULAR                          |                  |                  |                |          |            | 1  |
| LIVER             | 15.41    | 2.875 |                  | INFILTRATION, CHRONIC                                    |                  |                  |                |          |            | 1  |
| KIDNEYS           | 3.49     | 0.651 |                  | HISTIOCYTOSIS, ALVEOLAR                                  |                  |                  |                |          |            | 1  |
| HEART             | 1.81     | 0.338 | PROSTATE         | MICRO: INFILTRATION, SUBACUTE                            |                  |                  |                |          |            | 1  |
| SPLEEN            | 0.62     | 0.116 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL                             |                  |                  |                |          |            | 1  |
| PROSTATE          | 1.07     | 0.200 |                  | HYPERTROPHY, FOLLICULAR CELL                             |                  |                  |                |          |            | 1  |
| RT TESTIS         | 1.93     | 0.360 |                  | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED |                  |                  |                |          |            |    |
| LT TESTIS         | 1.95     | 0.364 |                  | COLLOID                                                  |                  |                  |                |          |            |    |
| RT EPIDIDYMIS     | 0.67     | 0.125 | NO SIGNIFICANT   |                                                          |                  |                  |                |          |            |    |
| LT EPIDIDYMIS     | 0.73     | 0.136 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                    | AORTA            | STERNEBRAE       |                |          |            |    |
| RT CAUDA EPID     | 0.2922   | 0.055 |                  | CECUM                                                    | COLON            | DUODENUM         |                |          |            |    |
| LT CAUDA EPID     | 0.3445   | 0.064 |                  | EYES/OPTIC N.                                            | HEART            | ESOPHAGUS        |                |          |            |    |
| THYMUS GLAND      | 0.2883   | 0.054 |                  | KIDNEYS                                                  | LIVER            | JEJUNUM          |                |          |            |    |
| ADRENAL GLANDS    | 0.0474   | 0.009 |                  | NERVE, SCIATIC                                           | PANCREAS         | LUNG             |                |          |            |    |
| THYROIDS/PARA     | 0.0233   | 0.004 |                  | RECTUM                                                   | PITUITARY        | LYMPH NODE, MES  |                |          |            |    |
| FINAL BODY WT (G) | 536.     |       |                  | SEMINAL VESICLES                                         | SKELLETAL MUSCLE | LT EPIDIDYMIS    |                |          |            |    |
|                   |          |       |                  | SPLEEN                                                   | STOMACH          | PROSTATE         |                |          |            |    |
|                   |          |       |                  | THYROID GLANDS                                           | RT TESTIS        | SKIN             |                |          |            |    |
|                   |          |       |                  | VAS DEFERENS                                             | LT TESTIS        | LYMPH NODE, MAND |                |          |            |    |
|                   |          |       |                  |                                                          | URINARY BLADDER  | SPINAL CORD      |                |          |            |    |
|                   |          |       |                  |                                                          |                  | THYMUS GLAND     |                |          |            |    |
|                   |          |       |                  |                                                          |                  | TRACHEA          |                |          |            |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43355    | GROUP  | 3 : 300 MG/KG/DAY | MALE                            | SCHEDULED EUTH                                                                                        | 07/28/00        | DATE OF DEATH: | 07/28/00 | STUDY DAY:    | 93                | GRADE |
|-------------------|----------|--------|-------------------|---------------------------------|-------------------------------------------------------------------------------------------------------|-----------------|----------------|----------|---------------|-------------------|-------|
| ORGAN WEIGHT      | Abs. (g) | REL.   | LIVER             |                                 | MICRO: INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR                                             |                 |                |          |               | 1                 |       |
| BRAIN             | 2.00     | 0.355  | LUNGS             |                                 | MICRO: MINERALIZATION, VASCULAR CYST, ULTIMOBRANCHIAL                                                 |                 |                |          |               | 1                 |       |
| LIVER             | 18.91    | 3.353  | THYROID GLANDS    |                                 | MICRO: HYPERTROPHY, FOLLICULAR CELL, SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED COLLOID |                 |                |          |               | 1                 |       |
| KIDNEYS           | 3.62     | 0.642  |                   |                                 |                                                                                                       |                 |                |          |               | 2                 |       |
| HEART             | 1.68     | 0.298  |                   |                                 |                                                                                                       |                 |                |          |               | 1                 |       |
| SPLEEN            | 0.66     | 0.117  |                   |                                 |                                                                                                       |                 |                |          |               |                   |       |
| PROSTATE          | 1.24     | 0.220  |                   |                                 |                                                                                                       |                 |                |          |               |                   |       |
| RT TESTIS         |          | 1.57   | 0.278             | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                                                                 | AORTA           |                |          | STERNEBRAE    | BRAIN             |       |
| LT TESTIS         |          | 1.55   | 0.275             |                                 | CECUM                                                                                                 | COLON           |                |          | DUODENUM      | ESOPHAGUS         |       |
| RT EPIDIDYMIS     |          | 0.62   | 0.110             |                                 | HEART                                                                                                 |                 |                |          | ILEUM         | JEJUNUM           |       |
| LT EPIDIDYMIS     |          | 0.59   | 0.105             |                                 | KIDNEYS                                                                                               | LIVER           |                |          | LYMPH NODE    | MES LUNGS         |       |
| RT CAUDA EPID     |          | 0.2959 | 0.052             |                                 | NERVE, SCIATIC                                                                                        | PANCREAS        |                |          | RT EPIDIDYMIS | LT EPIDIDYMIS     |       |
| LT CAUDA EPID     |          | 0.2905 | 0.052             |                                 | RECTUM                                                                                                | PITUITARY       |                |          | PROSTATE      | SAL. GLAND MAND   |       |
| THYMUS GLAND      |          | 0.3818 | 0.068             |                                 | SEMINAL VESICLES                                                                                      | SKELETAL MUSCLE |                |          | SKIN          | SPINAL CORD       |       |
| ADRENAL GLANDS    |          | 0.0715 | 0.013             |                                 | SPLEEN                                                                                                | STOMACH         |                |          | LYMPH NODE    | MAND THYMUS GLAND |       |
| THYROIDS/ PARA    |          | 0.0266 | 0.005             |                                 | THYROID GLANDS                                                                                        | RT TESTIS       |                |          | LT TESTIS     | URINARY BLADDER   |       |
| FINAL BODY WT (g) |          | 564.   |                   |                                 | VAS DEFERENS                                                                                          |                 |                |          |               |                   |       |

GROSS GRADE CODE : 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE : 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43361    | GROUP | 3: 300 MG/KG/DAY | MALE                 | SCHEDULED EUTH   | 07/28/00                                                                          | DATE OF DEATH:   | 07/28/00 | STUDY DAY: 93 | GRADE |
|-------------------|----------|-------|------------------|----------------------|------------------|-----------------------------------------------------------------------------------|------------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |                      | MICRO:           | INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR PERIORTAL TO MIDZONAL NECROSIS |                  |          |               | 1     |
| BRAIN             | 2.17     | 0.339 |                  |                      |                  |                                                                                   |                  |          |               | 1     |
| LIVER             | 23.79    | 3.711 |                  |                      |                  |                                                                                   |                  |          |               | 1     |
| KIDNEYS           | 4.67     | 0.729 |                  |                      |                  |                                                                                   |                  |          |               | 1     |
| HEART             | 1.71     | 0.267 |                  |                      |                  |                                                                                   |                  |          |               | 1     |
| SPLEEN            | 0.90     | 0.140 | LUNGS            |                      | MICRO:           | INFLAMMATION, GRANULOMATOUS FOCAL                                                 |                  |          |               |       |
| PROSTATE          | 1.21     | 0.189 | PROSTATE         |                      | MICRO:           | INFLAMMATION, CHRONIC ACTIVE                                                      |                  |          |               | 1     |
| RT TESTIS         | 1.69     | 0.264 | THYROID GLANDS   |                      | MICRO:           | HYPERTROPHY, FOLLICULAR CELL                                                      |                  |          |               | 1     |
| LT TESTIS         | 1.73     | 0.270 | NO SIGNIFICANT   |                      |                  |                                                                                   |                  |          |               | 1     |
| RT EPIDIDYMIS     | 0.70     | 0.109 | CHANGES OBSERVED | GROSS:ADRENAL GLANDS | AORTA            |                                                                                   | STERNEBRAE       |          |               |       |
| LT EPIDIDYMIS     | 0.61     | 0.095 |                  | CECUM                | COLON            |                                                                                   | DUODENUM         |          |               |       |
| RT CAUDA EPID     | 0.3457   | 0.054 |                  | EYES/OPTIC N.        | HEART            |                                                                                   | ESOPHAGUS        |          |               |       |
| LT CAUDA EPID     | 0.2725   | 0.043 |                  | KIDNEYS              | LIVER            |                                                                                   | JEJUNUM          |          |               |       |
| THYMUS GLAND      | 0.2167   | 0.034 |                  | NERVE, SCIATIC       | PANCREAS         |                                                                                   | LUNGS            |          |               |       |
| ADRENAL GLANDS    | 0.0552   | 0.009 |                  | RECTUM               | PITUITARY        |                                                                                   | LT EPIDIDYMIS    |          |               |       |
| THYROIDS/PARA     | 0.0338   | 0.005 |                  | SEMINAL VESICLES     | SKELLETAL MUSCLE |                                                                                   | PROSTATE         |          |               |       |
| FINAL BODY WT (G) | 641.     |       |                  | SPLIEEN              | STOMACH          |                                                                                   | SKIN             |          |               |       |
|                   |          |       |                  | THYROID GLANDS       | RT TESTIS        |                                                                                   | LYMPH NODE, MAND |          |               |       |
|                   |          |       |                  | VAS DEFERENS         | URINARY BLADDER  |                                                                                   | SPINAL CORD      |          |               |       |
|                   |          |       |                  |                      |                  |                                                                                   | LT TESTIS        |          |               |       |
|                   |          |       |                  |                      |                  |                                                                                   | TRACHEA          |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43363    | GROUP | 3 : 300 MG/KG/DAY | MALE | SCHEDULED EUTH                  | 07/26/00         | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91    | GRADE |
|-------------------|----------|-------|-------------------|------|---------------------------------|------------------|----------------|----------|------------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             |      | MICRO: INFILTRATION, SUBACUTE   |                  |                |          | BRAIN            | 1     |
| BRAIN             | 2.01     | 0.405 |                   |      | VACUOLATION, HEPATOCELLULAR     |                  |                |          | ESOPHAGUS        | 1     |
| LIVER             | 14.91    | 3.006 | LUNGS             |      | MICRO: MINERALIZATION, VASCULAR |                  |                |          | JEJUNUM          | 1     |
| KIDNEYS           | 3.24     | 0.653 | PROSTATE          |      | MICRO: INFILTRATION, SUBACUTE   |                  |                |          | LUNGS            | 2     |
| HEART             | 1.51     | 0.304 | NO SIGNIFICANT    |      | GROSS: ADRENAL GLANDS           | AORTA            |                |          |                  |       |
| SPLEEN            | 0.37     | 0.075 | CHANGES OBSERVED  |      | CECUM                           | COLON            |                |          | STERNEBRAE       |       |
| PROSTATE          | 0.70     | 0.141 |                   |      | EYES/OPTIC N.                   | HEART            |                |          | DUODENUM         |       |
| RT TESTIS         | 1.41     | 0.284 |                   |      | KIDNEYS                         | LIVER            |                |          | ILEUM            |       |
| LT TESTIS         | 1.42     | 0.286 |                   |      | NERVE, SCIATIC                  | PANCREAS         |                |          | LYMPH NODE, MES  |       |
| RT EPIDIDYMIS     | 0.66     | 0.133 |                   |      | RECTUM                          | PITUITARY        |                |          | RT EPIDIDYMIS    |       |
| LT EPIDIDYMIS     | 0.53     | 0.107 |                   |      | SEMINAL VESICLES                | SKELLETAL MUSCLE |                |          | PROSTATE         |       |
| RT CAUDA EPID     | 0.3000   | 0.060 |                   |      | SPLLEEN                         | STOMACH          |                |          | SKIN             |       |
| LT CAUDA EPID     | 0.2180   | 0.044 |                   |      | THYROID GLANDS                  | RT TESTIS        |                |          | SPINAL CORD      |       |
| ADRENAL GLANDS    | 0.3906   | 0.079 |                   |      | VAS DEFERENS                    | URINARY BLADDER  |                |          | LYMPH NODE, MAND |       |
| THYROIDS/PARA     | 0.0448   | 0.009 |                   |      | MICRO: THYROID GLANDS           |                  |                |          | THYRUS GLAND     |       |
| FINAL BODY WT (G) | 496.     |       |                   |      |                                 |                  |                |          | TRACHEA          |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43363 | GROUP | 3 : 300 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 | GRADE |
|------------|-------|-------|-------------------|------|----------------|----------|----------------|----------|------------|----|-------|
|------------|-------|-------|-------------------|------|----------------|----------|----------------|----------|------------|----|-------|

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43383    | GROUP | 3: 300 MG/KG/DAY                | MALE                               | SCHEDULED EUTH   | 07/27/00        | DATE OF DEATH:    | 07/27/00 | STUDY DAY: | 92    |
|-------------------|----------|-------|---------------------------------|------------------------------------|------------------|-----------------|-------------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           | MICRO: INFLAMMATION, SUBACUTE      |                  |                 |                   |          |            | GRADE |
| BRAIN             | 1.97     | 0.379 | LUNGS                           | MICRO: INFLAMMATION, GRANULOMATOUS |                  |                 |                   |          |            | 1     |
| LIVER             | 16.01    | 3.079 | PROSTATE                        | MICRO: INFLAMMATION, SUBACUTE      |                  |                 |                   |          |            | 1     |
| KIDNEYS           | 3.38     | 0.650 | NO SIGNIFICANT CHANGES OBSERVED |                                    |                  |                 |                   |          |            | 1     |
| HEART             | 1.67     | 0.321 |                                 | GROSS: ADRENAL GLANDS              | AORTA            | STERNEBRAE      | BRAIN             |          |            |       |
| SPLEEN            | 0.80     | 0.154 |                                 | CECUM                              | COLON            | DUODENUM        | ESOPHAGUS         |          |            |       |
| PROSTATE          | 0.96     | 0.185 |                                 | EYES/OPTIC N.                      | HEART            | ILEUM           | JEJUNUM           |          |            |       |
| RT TESTIS         | 1.80     | 0.346 |                                 | KIDNEYS                            | LIVER            | LYMPH NODE, MES | LUNGS             |          |            |       |
| LT TESTIS         | 1.75     | 0.337 |                                 | NERVE, SCIATIC                     | PANCREAS         | RT EPIDIDYMIS   | LT EPIDIDYMIS     |          |            |       |
| RT EPIDIDYMIS     | 0.74     | 0.142 |                                 | RECTUM                             | PITUITARY        | PROSTATE        | SAL. GLAND MAND   |          |            |       |
| LT EPIDIDYMIS     | 0.70     | 0.135 |                                 | SEMINAL VESICLES                   | SKELLETAL MUSCLE | SKIN            | SPINAL CORD       |          |            |       |
| RT CAUDA EPID     | 0.2956   | 0.057 |                                 | SPLEEN                             | STOMACH          | LYMPH NODE      | MAND THYMUS GLAND |          |            |       |
| LT CAUDA EPID     | 0.3312   | 0.064 |                                 | THYROID GLANDS                     | RT TESTIS        | LT TESTIS       | TRACHEA           |          |            |       |
| THYMUS GLAND      | 0.2845   | 0.055 |                                 | VAS DEFERENS                       | URINARY BLADDER  |                 |                   |          |            |       |
| ADRENAL GLANDS    | 0.0586   | 0.011 |                                 | MICRO: THYROID GLANDS              |                  |                 |                   |          |            |       |
| THYROIDS/ PARA    | 0.0306   | 0.006 |                                 |                                    |                  |                 |                   |          |            |       |
| FINAL BODY WT (G) | 520.     |       |                                 |                                    |                  |                 |                   |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43385    | GROUP | 3: 300 MG/KG/DAY | MALE | SCHEDULED EUTH.       | 07/27/00                                           | DATE OF DEATH:  | 07/27/00 | STUDY DAY: | 92    |
|-------------------|----------|-------|------------------|------|-----------------------|----------------------------------------------------|-----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |      | MICRO:                | INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR |                 |          |            | GRADE |
| BRAIN             | 1.96     | 0.359 |                  |      | MICRO:                | VACUOLATION, HEPATOCELLULAR                        |                 |          |            | 1     |
| LIVER             | 16.34    | 2.993 | LUNGS            |      | MICRO:                | INFILTRATION, GRANULOMATOUS                        |                 |          |            | 1     |
| KIDNEYS           | 3.14     | 0.575 | PROSTATE         |      | MICRO:                | INFILTRATION, CHRONIC ACTIVE                       |                 |          |            | 1     |
| HEART             | 1.60     | 0.293 | THYROID GLANDS   |      | MICRO:                | CYST, UTEROBRANCHIAL HYPERTrophy, FOLLICULAR CELL  |                 |          |            | 1     |
| SPLEEN            | 0.74     | 0.136 |                  |      |                       |                                                    |                 |          |            | 2     |
| PROSTATE          | 1.13     | 0.207 | NO SIGNIFICANT   |      |                       |                                                    |                 |          |            |       |
| RT TESTIS         | 1.47     | 0.269 | CHANGES OBSERVED |      | GROSS: ADRENAL GLANDS | AORTA                                              | STERNEBRAE      |          |            |       |
| LT TESTIS         | 1.52     | 0.278 |                  |      | CECUM                 | COLON                                              | DUODENUM        |          |            |       |
| RT EPIDIDYMIS     | 0.63     | 0.115 |                  |      | EYES/OPTIC N.         | HEART                                              | ESOPHAGUS       |          |            |       |
| LT EPIDIDYMIS     | 0.57     | 0.104 |                  |      | KIDNEYS               | LIVER                                              | JEJUNUM         |          |            |       |
| RT CAUDA EPID     | 0.2703   | 0.050 |                  |      | NERVE, SCIATIC        | PANCREAS                                           | LUNGS           |          |            |       |
| LT CAUDA EPID     | 0.2955   | 0.054 |                  |      | RECTUM                | PITUITARY                                          | LT EPIDIDYMIS   |          |            |       |
| THYMUS GLAND      | 0.2163   | 0.040 |                  |      | SEMINAL VESICLES      | SKELETAL MUSCLE                                    | PROSTATE        |          |            |       |
| ADRENAL GLANDS    | 0.0537   | 0.010 |                  |      | SPLEEN                | STOMACH                                            | SAL. GLAND MAND |          |            |       |
| THYROIDS/PARA     | 0.0199   | 0.004 |                  |      | THYROID GLANDS        | RT TESTIS                                          | SPINAL CORD     |          |            |       |
| FINAL BODY WT (G) | 546.     |       |                  |      | VAS DEFERENS          | URINARY BLADDER                                    | LT TESTIS       |          |            |       |

GROSS GRADE CODE: 1 - SLIGHT, 2 - MODERATE, 3 - MARKED, P - PRESENT  
MICRO GRADE CODE: 1 - MINIMAL, 2 - MILD, 3 - MODERATE, 4 - SEVERE, P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43388    | GROUP | 3 : 300 MG/KG/DAY | MALE                                            | SCHEDULED EUTH  | 07/27/00        | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92    |
|-------------------|----------|-------|-------------------|-------------------------------------------------|-----------------|-----------------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS           | GROSS: DEPRESSED AREA (S)                       |                 |                 |                |          |            | GRADE |
| BRAIN             | 2.14     | 0.368 |                   | SEVERAL, 2 X 2 X 1 MM, IN CORTEX, BILATERAL     |                 |                 |                |          |            | P     |
| LIVER             | 20.59    | 3.538 | KIDNEYS           | MICRO: BASOPHILIC TUBULES                       |                 |                 |                |          |            | 1     |
| KIDNEYS           | 4.26     | 0.732 |                   | FOCAL: CORRELATES WITH GROSS DEPRESSED AREA (S) |                 |                 |                |          |            |       |
| HEART             | 1.76     | 0.302 | LIVER             | MICRO: INFLAMMATION, SUBACUTE                   |                 |                 |                |          |            | 1     |
| SPLEEN            | 0.92     | 0.158 | LUNGS             | GROSS: WHITE AREA (S)                           |                 |                 |                |          |            | P     |
| PROSTATE          | 1.24     | 0.213 |                   | MULTIPLE, IRREGULARLY SHAPED, ALL LOBES         |                 |                 |                |          |            | P     |
| RT TESTIS         | 1.66     | 0.285 | LUNGS             | MICRO: HISTIOCYTOSIS, ALVEOLAR                  |                 |                 |                |          |            | 2     |
| LT TESTIS         | 1.70     | 0.292 |                   | CORRELATES WITH GROSS WHITE AREAS               |                 |                 |                |          |            |       |
| RT EPIDIDYMIS     | 0.70     | 0.120 |                   | INFLAMMATION, ACUTE                             |                 |                 |                |          |            |       |
| LT EPIDIDYMIS     | 0.81     | 0.139 |                   | CORRELATES WITH GROSS WHITE AREAS               |                 |                 |                |          |            | 1     |
| RT CAUDA EPID     | 0.2761   | 0.047 | PROSTATE          | MICRO: INFLAMMATION, SUBACUTE                   |                 |                 |                |          |            | 1     |
| LT CAUDA EPID     | 0.3593   | 0.062 | THYROID GLANDS    | MICRO: HYPERTROPHY, FOLLICULAR CELL             |                 |                 |                |          |            | 1     |
| THYMUS GLAND      | 0.2762   | 0.047 | NO SIGNIFICANT    |                                                 |                 |                 |                |          |            |       |
| ADRENAL GLANDS    | 0.0637   | 0.011 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS                           | AORTA           | STERNEBRAE      | BRAIN          |          |            |       |
| THYROIDS/PARA     | 0.0251   | 0.004 |                   | CECUM                                           | COLON           | DUODENUM        | ESOPHAGUS      |          |            |       |
| FINAL BODY WT (G) | 582.     |       |                   | EYES/OPTIC N.                                   | HEART           | ILEUM           | JEJUNUM        |          |            |       |
|                   |          |       |                   | LIVER                                           | LYMPH NODE, MES | NERVE, SCIATIC  | PANCREAS       |          |            |       |
|                   |          |       |                   | RT EPIDIDYMIS                                   | LT EPIDIDYMIS   | RECTUM          | PITUITARY      |          |            |       |
|                   |          |       |                   | PROSTATE                                        | SAL. GLAND MAND | SKELETAL MUSCLE |                |          |            |       |
|                   |          |       |                   | SKIN                                            | SPINAL CORD     | SPLEEN          | STOMACH        |          |            |       |
|                   |          |       |                   | LYMPH NODE, MAND THYMUS GLAND                   | THYROID GLAND   | VAS DEFERENS    | RT TESTIS      |          |            |       |
|                   |          |       |                   | LT TESTIS                                       | TRACHEA         | URINARY BLADDER |                |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43392   | GROUP | 3 : 300 MG/KG/DAY | MALE                            | SCHEDULED EUTH | 07/26/00        | DATE OF DEATH:  | 07/26/00 | STUDY DAY:                    | 91 |
|-------------------|---------|-------|-------------------|---------------------------------|----------------|-----------------|-----------------|----------|-------------------------------|----|
| ORGAN WEIGHT      | ABS (G) | REL.  | LIVER             | MICRO: INFILTRATION, SUBACUTE   |                |                 |                 |          | GRADE                         |    |
| BRAIN             | 2.02    | 0.394 | LUNGS             | MICRO: MINERALIZATION, VASCULAR |                |                 |                 |          |                               | 1  |
| LIVER             | 15.91   | 3.101 |                   | INFILTRATION, GRANULOMATOUS     |                |                 |                 |          |                               | 1  |
| KIDNEYS           | 3.54    | 0.690 |                   | INFILTRATION, CHRONIC           |                |                 |                 |          |                               | 1  |
| HEART             | 1.45    | 0.283 | NO SIGNIFICANT    | GROSS: ADRENAL GLANDS           | AORTA          | STERNEBRAE      |                 |          | BRAIN                         |    |
| SPLEEN            | 0.79    | 0.154 | CHANGES OBSERVED  | CECUM                           | COLON          | DUODENUM        |                 |          | ESOPHAGUS                     |    |
| PROSTATE          | 1.11    | 0.216 |                   | EYES/OPTIC N.                   | HEART          | ILEUM           |                 |          | JEJUNUM                       |    |
| RT TESTIS         | 1.65    | 0.322 |                   | KIDNEYS                         | LIVER          | LYMPH NODE      |                 |          | LUNGS                         |    |
| LT TESTIS         | 1.65    | 0.322 |                   |                                 |                | PANCREAS        |                 |          | LT EPIDIDYMIS                 |    |
| RT EPIDIDYMIS     | 0.68    | 0.133 |                   |                                 |                | NERVE, SCIATIC  |                 |          | PROSTATE                      |    |
| LT EPIDIDYMIS     | 0.67    | 0.131 |                   |                                 |                | RECTUM          |                 |          | SEMINAL VESICLES              |    |
| RT CAUDA EPID     | 0.3056  | 0.060 |                   |                                 |                | PITUITARY       |                 |          | SKELETAL MUSCLE               |    |
| LT CAUDA EPID     | 0.2827  | 0.055 |                   |                                 |                | SPLEEN          |                 |          | SPLEEN                        |    |
| THYMUS GLAND      | 0.2779  | 0.054 |                   |                                 |                | STOMACH         |                 |          | STOMACH                       |    |
| ADRENAL GLANDS    | 0.0549  | 0.011 |                   |                                 |                | THYROID GLANDS  | RT TESTIS       |          | LYMPH NODE, MAND THYMUS GLAND |    |
| THYROIDS/PARA     | 0.0194  | 0.004 |                   |                                 |                | VAS DEFERENS    |                 |          | LT TESTIS                     |    |
| FINAL BODY WT (G) | 513.    |       |                   |                                 |                | MICRO: PROSTATE | URINARY BLADDER |          | URINARY BLADDER               |    |
|                   |         |       |                   |                                 |                | THYROID GLANDS  |                 |          | TRACHEA                       |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | GROUP | 3: 300 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 |
|------------|-------|------------------|------|----------------|----------|----------------|----------|------------|----|
| 43392      |       |                  |      |                |          |                |          | GRADE      |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.            | 43297    | GROUP | 4:             | 1000 MG./KG./DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:                                           | 07/28/00 | STUDY DAY: | 93 |
|-----------------------|----------|-------|----------------|------------------|------|----------------|----------|----------------------------------------------------------|----------|------------|----|
| ORGAN WEIGHT          | ABS. (G) | REL.  |                |                  |      |                |          |                                                          |          | GRADE      |    |
| BRAIN                 | 2.00     | 0.388 | HEART          | KIDNEYS          |      |                |          | MICRO: CARDIOMYOATHY                                     |          |            | 1  |
| LIVER                 | 20.27    | 3.928 |                |                  |      |                |          | MICRO: INFILTRATION, SUBACUTE                            |          |            | 2  |
| KIDNEYS               | 3.47     | 0.672 | LIVER          |                  |      |                |          | MICRO: BASOPHILIC TUBULES                                |          |            | 2  |
| HEART                 | 1.54     | 0.298 |                |                  |      |                |          | MICRO: VACUOLATION, HEPATOCELLULAR                       |          |            | 1  |
| SPLEEN                | 0.76     | 0.147 |                |                  |      |                |          | PAS STAIN, POSITIVE                                      |          |            | 2  |
| PROSTATE              | 1.11     | 0.215 |                |                  |      |                |          | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT |          |            | 2  |
| RT TESTIS             | 1.48     | 0.287 |                |                  |      |                |          | OIL RED O, POSITIVE                                      |          |            | 3  |
| LT TESTIS             | 1.60     | 0.310 | ADRENAL CORTEX |                  |      |                |          | PERIORTAL TO MIDZONAL                                    |          |            | 3  |
| RT EPIDIDYMIS         | 0.59     | 0.114 | PANCREAS       |                  |      |                |          | VACUOLATION                                              |          |            | 1  |
| LT EPIDIDYMIS         | 0.62     | 0.120 |                | SKELETAL MUSCLE  |      |                |          | MICRO: INFILTRATE, FATTY                                 |          |            | 1  |
| RT CAUDA EPID         | 0.2637   | 0.051 |                | SPLIEEN          |      |                |          | MICRO: DEGENERATION                                      |          |            | 1  |
| LT CAUDA EPID         | 0.2853   | 0.055 |                | THYMUS GLAND     |      |                |          | MICRO: VACUOLATION                                       |          |            | 1  |
| THYMUS GLAND          | 0.1827   | 0.035 |                |                  |      |                |          | MICRO: HEMORRHAGE                                        |          |            | 1  |
| ADRENAL GLANDS        | 0.0589   | 0.011 | THYROID GLANDS |                  |      |                |          | ATROPHY                                                  |          |            | 1  |
| THYROID/ PARA         | 0.0204   | 0.004 |                |                  |      |                |          | MICRO: CYST, ULMIMOBANCHIAL                              |          |            | 1  |
| FINAL BODY WT (G)     | 516.     |       |                |                  |      |                |          | HYPERTROPHY, FOLLICULAR CELL                             |          |            | 1  |
|                       |          |       |                |                  |      |                |          | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED |          |            | 1  |
|                       |          |       |                |                  |      |                |          | COLLOID                                                  |          |            | 1  |
| NO SIGNIFICANT        |          |       |                |                  |      |                |          |                                                          |          |            |    |
| CHANGES OBSERVED      |          |       |                |                  |      |                |          |                                                          |          |            |    |
|                       |          |       |                |                  |      |                |          |                                                          |          |            |    |
| GROSS: ADRENAL GLANDS |          |       |                |                  |      |                |          | AORTA                                                    |          |            |    |
| CECUM                 |          |       |                |                  |      |                |          | COLON                                                    |          |            |    |
| EYES/OPTIC N.         |          |       |                |                  |      |                |          | HEART                                                    |          |            |    |
| KIDNEYS               |          |       |                |                  |      |                |          | LIVER                                                    |          |            |    |
| NERVE, SCIATIC        |          |       |                |                  |      |                |          | PANCREAS                                                 |          |            |    |
| RECTUM                |          |       |                |                  |      |                |          | PITUITARY                                                |          |            |    |
| SEMINAL VESICLES      |          |       |                |                  |      |                |          | SKIN                                                     |          |            |    |
| SPLIEEN               |          |       |                |                  |      |                |          | STOMACH                                                  |          |            |    |
| THYROID GLANDS        |          |       |                |                  |      |                |          | LYMPH NODE, MAND                                         |          |            |    |
|                       |          |       |                |                  |      |                |          | SPINAL CORD                                              |          |            |    |
|                       |          |       |                |                  |      |                |          | LT TESTIS                                                |          |            |    |
|                       |          |       |                |                  |      |                |          | THYMUS GLAND                                             |          |            |    |
|                       |          |       |                |                  |      |                |          | TRACHEA                                                  |          |            |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43297 | GROUP | 4: | 1000 MG/KG/DAY | MALE | SCHEDULED EUTHI | 07/28/00        | DATE OF DEATH:  | 07/28/00      | STUDY DAY:       | 93     | GRADE |
|------------|-------|-------|----|----------------|------|-----------------|-----------------|-----------------|---------------|------------------|--------|-------|
|            |       |       |    |                |      | VAS DEFERENS    | URINARY BLADDER | BRAIN           | CECUM         | EYES/OPTIC N.    |        |       |
|            |       |       |    |                |      | MICRO ACRTA     | STERNEBRAE      | ESOPHAGUS       |               |                  |        |       |
|            |       |       |    |                |      | COLON           | DODENUM         |                 |               |                  |        |       |
|            |       |       |    |                |      | ILEUM           | JEJUNUM         | LYMPH NODE,     | MES           | LUNGS            |        |       |
|            |       |       |    |                |      | ADRENAL MEDULLA | NEERVE, SCIATIC | STOMACH, GLD    | STOMACH,      | STOMACH,         | NONGLD |       |
|            |       |       |    |                |      | MARROW, STERN   | PARTHYROID      | RT EPIDIDYMIS   | RT EPIDIDYMIS | RECTUM           |        |       |
|            |       |       |    |                |      | PITUITARY       | PROSTATE        | SAL.            | GLAND MAND    | SEMINAL VESICLES |        |       |
|            |       |       |    |                |      | SKIN            | SPINAL CORD     | LYMPH NODE,     | MAND          | RT TESTIS        |        |       |
|            |       |       |    |                |      | TRACHEA         | VAS DEFERENS    | URINARY BLADDER |               |                  |        |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 47

ANIMAL NO. 43325 GROUP 4: 1000 MG/KG/DAY MALE SCHEDULED EUTH 07/27/00 DATE OF DEATH: 07/27/00 STUDY DAY: 92 GRADE

|                  |                 |                |                 |
|------------------|-----------------|----------------|-----------------|
| LUNGS            | ADRENAL MEDULLA | NERVE, SCIATIC | STOMACH, GLD    |
| STOMACH, NONGLD  | MARROW, STERN   | PANCREAS       | PARATHYROID     |
| RT EPIDIDYMIS    | RECTUM,         | PITUITARY      | SAL. GLAND MAND |
| SEMINAL VESICLES | SKELETAL MUSCLE | SPINAL CORD    | SPLEEN          |
| LYMPH NODE, MAND | RT TESTIS       | TRACHEA        | VAS DEFERENS    |
| URINARY BLADDER  |                 |                |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43328    | GROUP | 4 : 1000 MG/KG/DAY | MALE                                                      | SCHEDULED EUTH                                      | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|--------------------|-----------------------------------------------------------|-----------------------------------------------------|----------|----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS            | MICRO: BASOPHILIC TUBULES                                 |                                                     |          |                |          |               | 1     |
| BRAIN             | 1.99     | 0.394 | LIVER              | MICRO: VACUOLATION, HEPATOCELLULAR                        |                                                     |          |                |          |               | 1     |
| LIVER             | 19.30    | 3.822 |                    | INFLAMMATION, SUBACUTE                                    |                                                     |          |                |          |               | 2     |
| KIDNEYS           | 3.76     | 0.745 |                    | DAS STAIN, POSITIVE                                       |                                                     |          |                |          |               | 1     |
| HEART             | 1.58     | 0.313 |                    | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT  |                                                     |          |                |          |               | 1     |
| SPLEEN            | 0.73     | 0.145 |                    | OIL RED O, POSITIVE                                       |                                                     |          |                |          |               | 2     |
| PROSTATE          | 1.56     | 0.309 |                    | PERIPORTAL TO MIDZONAL                                    |                                                     |          |                |          |               |       |
| RT TESTIS         | 1.78     | 0.352 | LUNGS              | GROSS: MOTTLED                                            |                                                     |          |                |          |               | P     |
| LT TESTIS         | 1.76     | 0.349 |                    | ALL LOBES                                                 |                                                     |          |                |          |               |       |
| RT EPIDIDYMIS     | 0.72     | 0.143 | LUNGS              | MICRO: MINERALIZATION, VASCULAR                           |                                                     |          |                |          |               |       |
| LT EPIDIDYMIS     | 0.70     | 0.139 |                    | HEMORRHAGE                                                |                                                     |          |                |          |               | 1     |
| RT CAUDA EPID     | 0.3545   | 0.070 |                    | CORRELATES TO GROS MOTTLED APPEARANCE                     |                                                     |          |                |          |               | 1     |
| LT CAUDA EPID     | 0.2964   | 0.059 |                    | INFLAMMATION, CHRONIC                                     |                                                     |          |                |          |               | 1     |
| THYMUS GLAND      | 0.2816   | 0.056 |                    | INFLAMMATION, GRANULOMATOUS                               |                                                     |          |                |          |               | 1     |
| ADRENAL GLANDS    | 0.0673   | 0.013 |                    | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                                                     |          |                |          |               |       |
| THYROID GLANDS    | 0.0272   | 0.005 | SKIN               | AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES          |                                                     |          |                |          |               |       |
| FINAL BODY WT (G) | 505.     |       |                    | SKIN                                                      | GROSS: MASS                                         |          |                |          |               | P     |
|                   |          |       |                    |                                                           | MICRO: INFLAMMATION, CHRONIC                        |          |                |          |               | 3     |
|                   |          |       |                    |                                                           | FOCAL IN DEEP DERMIS, SUBCUTIS AND SKELETAL MUSCLE; |          |                |          |               |       |
|                   |          |       |                    |                                                           | CORRELATES WITH MASS #1                             |          |                |          |               |       |
| THYMUS GLAND      |          |       |                    | MICRO: HEMORRHAGE                                         |                                                     |          |                |          |               | 1     |
| THYROID GLANDS    |          |       |                    | MICRO: HYPERTROPHY, FOLLICULAR CELL                       |                                                     |          |                |          |               | 2     |
| NO SIGNIFICANT    |          |       |                    | GROSS: ADRENAL GLANDS                                     |                                                     |          |                |          |               |       |
| CHANGES OBSERVED  |          |       |                    | AORTA                                                     |                                                     |          |                |          |               |       |
|                   |          |       |                    | STERNEBRAE                                                |                                                     |          |                |          |               |       |
|                   |          |       |                    | BRAIN                                                     |                                                     |          |                |          |               |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43328 | GROUP | 4: | 1000 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH:   | 07/26/00         | STUDY DAY:      | 91               | GRADE |
|------------|-------|-------|----|----------------|------|----------------|----------|------------------|------------------|-----------------|------------------|-------|
|            |       |       |    |                |      |                |          | CECUM            | DUODENUM         | ESOPHAGUS       |                  |       |
|            |       |       |    |                |      |                |          | EYES/OPTIC N.    | ILEUM            | JEJUNUM         |                  |       |
|            |       |       |    |                |      |                |          | KIDNEYS          | LYMPH NODE, MES  | NERVE, SCIATIC  |                  |       |
|            |       |       |    |                |      |                |          | PANCREAS         | LT EPIDIDYMIS    | RECTUM          |                  |       |
|            |       |       |    |                |      |                |          | PITUITARY        | PROSTATE         | SAL. GLAND MAND | SEMINAL VESICLES |       |
|            |       |       |    |                |      |                |          | SKELETAL MUSCLE  | SPINAL CORD      | SPLEEN          | STOMACH          |       |
|            |       |       |    |                |      |                |          | LYMPH NODE, MAND | THYMUS GLAND     | THYROID GLANDS  | RT TESTIS        |       |
|            |       |       |    |                |      |                |          | LT TESTIS        | TRACHEA          | VAS DEFERENS    | URINARY BLADDER  |       |
|            |       |       |    |                |      |                |          | MICRO AORTA      | STERNOBRAE       | BRAIN           | CECUM            |       |
|            |       |       |    |                |      |                |          | COLON            | DUODENUM         | ESOPHAGUS       | EYES/OPTIC N.    |       |
|            |       |       |    |                |      |                |          | HEART            | ILEUM            | JEJUNUM         | LYMPH NODE, MES  |       |
|            |       |       |    |                |      |                |          | ADRENAL CORTEX   | ADRENAL MEDULLA  | NERVE, SCIATIC  | STOMACH, GLD     |       |
|            |       |       |    |                |      |                |          | STOMACH, NONGLD  | MARROW, STERN    | PANCREAS        | PARATHYROID      |       |
|            |       |       |    |                |      |                |          | RT EPIDIDYMIS    | RECTUM           | PITUITARY       | PROSTATE         |       |
|            |       |       |    |                |      |                |          | SAL. GLAND MAND  | SEMINAL VESICLES | SKELETAL MUSCLE | SPINAL CORD      |       |
|            |       |       |    |                |      |                |          | SPLEEN           | LYMPH NODE, MAND | RT TESTIS       | TRACHEA          |       |
|            |       |       |    |                |      |                |          | VAS DEFERENS     | URINARY BLADDER  |                 |                  |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43346    | GROUP | 4:               | 1000 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93    |
|-------------------|----------|-------|------------------|----------------|------|----------------|----------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | HEART            |                |      |                |          |                |          |            | GRADE |
| BRAIN             | 1.94     | 0.449 | LIVER            |                |      |                |          |                |          |            | 1     |
| LIVER             | 16.75    | 3.877 |                  |                |      |                |          |                |          |            | 2     |
| KIDNEYS           | 2.99     | 0.692 |                  |                |      |                |          |                |          |            | 2     |
| HEART             | 1.26     | 0.292 |                  |                |      |                |          |                |          |            |       |
| SPLEEN            | 0.59     | 0.137 |                  |                |      |                |          |                |          |            |       |
| PROSTATE          | 1.07     | 0.248 | LUNGS            |                |      |                |          |                |          |            |       |
| RT TESTIS         | 1.82     | 0.421 |                  |                |      |                |          |                |          |            |       |
| LT TESTIS         | 1.81     | 0.419 |                  |                |      |                |          |                |          |            |       |
| RT EPIDIDYMIS     | 0.73     | 0.169 |                  |                |      |                |          |                |          |            |       |
| LT EPIDIDYMIS     | 0.72     | 0.167 |                  |                |      |                |          |                |          |            |       |
| RT CAUDA EPID     | 0.3219   | 0.075 | THYMUS GLAND     |                |      |                |          |                |          |            |       |
| LT CAUDA EPID     | 0.3342   | 0.077 | THYROID GLANDS   |                |      |                |          |                |          |            |       |
| THYMUS GLAND      | 0.2125   | 0.049 | NO SIGNIFICANT   |                |      |                |          |                |          |            |       |
| ADRENAL GLANDS    | 0.0480   | 0.011 | CHANGES OBSERVED |                |      |                |          |                |          |            |       |
| THYROID/ PARA     | 0.0219   | 0.005 |                  |                |      |                |          |                |          |            |       |
| FINAL BODY WT (G) | 432.     |       |                  |                |      |                |          |                |          |            |       |
| MICRO: AORTA      |          |       |                  |                |      |                |          |                |          |            |       |
| COLON             |          |       |                  |                |      |                |          |                |          |            |       |
| ILEUM             |          |       |                  |                |      |                |          |                |          |            |       |
| ADRENAL CORTEX    |          |       |                  |                |      |                |          |                |          |            |       |
| STERNEBRAE        |          |       |                  |                |      |                |          |                |          |            |       |
| DUODENUM          |          |       |                  |                |      |                |          |                |          |            |       |
| JEJUNUM           |          |       |                  |                |      |                |          |                |          |            |       |
| SPINAL CORD       |          |       |                  |                |      |                |          |                |          |            |       |
| ADRENAL MEDULLA   |          |       |                  |                |      |                |          |                |          |            |       |
| STOMACH           |          |       |                  |                |      |                |          |                |          |            |       |
| TESTIS            |          |       |                  |                |      |                |          |                |          |            |       |
| TRACHEA           |          |       |                  |                |      |                |          |                |          |            |       |
| THYMUS GLAND      |          |       |                  |                |      |                |          |                |          |            |       |
| LYMPH NODE, MES   |          |       |                  |                |      |                |          |                |          |            |       |
| PROSTATE          |          |       |                  |                |      |                |          |                |          |            |       |
| PITUITARY         |          |       |                  |                |      |                |          |                |          |            |       |
| RECTUM            |          |       |                  |                |      |                |          |                |          |            |       |
| SEMINAL VESICLES  |          |       |                  |                |      |                |          |                |          |            |       |
| SPLIEN            |          |       |                  |                |      |                |          |                |          |            |       |
| THYROID GLANDS    |          |       |                  |                |      |                |          |                |          |            |       |
| VAS DEFERENS      |          |       |                  |                |      |                |          |                |          |            |       |
| URINARY BLADDER   |          |       |                  |                |      |                |          |                |          |            |       |
| STERNEBRAE        |          |       |                  |                |      |                |          |                |          |            |       |
| DUODENUM          |          |       |                  |                |      |                |          |                |          |            |       |
| JEJUNUM           |          |       |                  |                |      |                |          |                |          |            |       |
| KIDNEYS           |          |       |                  |                |      |                |          |                |          |            |       |
| ADRENAL CORTEX    |          |       |                  |                |      |                |          |                |          |            |       |
| BRAIN             |          |       |                  |                |      |                |          |                |          |            |       |
| ESOPHAGUS         |          |       |                  |                |      |                |          |                |          |            |       |
| KIDNEYS           |          |       |                  |                |      |                |          |                |          |            |       |
| ADRENAL MEDULLA   |          |       |                  |                |      |                |          |                |          |            |       |
| STOMACH, GLD      |          |       |                  |                |      |                |          |                |          |            |       |
| CECUM             |          |       |                  |                |      |                |          |                |          |            |       |
| EYES/OPTIC N.     |          |       |                  |                |      |                |          |                |          |            |       |
| LYMPH NODE, MES   |          |       |                  |                |      |                |          |                |          |            |       |
| STOMACH           |          |       |                  |                |      |                |          |                |          |            |       |
| SCIATIC           |          |       |                  |                |      |                |          |                |          |            |       |

PROJECT NO. :WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43346 | GROUP | 4 : | 1000 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:                                                                 | 07/28/00                                                              | STUDY DAY:                                                                                 | 93                              | GRADE |
|------------|-------|-------|-----|----------------|------|----------------|----------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------|-------|
|            |       |       |     |                |      |                |          | STOMACH, NONGLD<br>RT. EPIDIDYMIS<br>SAL. GLAND MAND<br>SPINAL CORD<br>TRACHEA | MARROW, STERN<br>RECTUM<br>SEMINAL VESICLES<br>SPLEEN<br>VAS DEFERENS | PANCREAS<br>PITUITARY<br>SKELLETAL MUSCLE<br>Lymph Node, MAND RT TESTIS<br>URINARY BLADDER | PARATHYROID<br>PROSTATE<br>SKIN |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43362    | GROUP | 4 : 1000 MG/KG/DAY | MALE | SCHEDULED EUTH                                                   | 07/27/00         | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|--------------------|------|------------------------------------------------------------------|------------------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | ESOPHAGUS          |      | MICRO: DEGENERATION                                              |                  |                |          |            | 1  |       |
| BRAIN             | 2.01     | 0.406 |                    |      | FOCAL IN MUSCLE WALL                                             |                  |                |          |            |    |       |
| LIVER             | 18.38    | 3.713 | LIVER              |      | MICRO: VACUOLATION, HEPATOCELLULAR                               |                  |                |          |            | 2  |       |
| KIDNEYS           | 3.22     | 0.651 | LUNGS              |      | MICRO: INFILTRATION, CHRONIC                                     |                  |                |          |            | 2  |       |
| HEART             | 1.34     | 0.271 |                    |      | INFILTRATION, GRANULOMATOUS                                      |                  |                |          |            | 2  |       |
| SPLEEN            | 0.83     | 0.168 |                    |      | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS        |                  |                |          |            |    |       |
| PROSTATE          | 1.18     | 0.238 |                    |      | AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES                 |                  |                |          |            |    |       |
| RT TESTIS         | 1.62     | 0.327 | RT EPIDIDYMIS      |      | MICRO: INFILTRATE, MONONUCLEAR                                   |                  |                |          |            | 1  |       |
| LT TESTIS         | 1.61     | 0.325 |                    |      | INTERSTITIAL                                                     |                  |                |          |            |    |       |
| RT EPIDIDYMIS     | 0.65     | 0.131 | PROSTATE           |      | MICRO: INFILTRATION, SUBACUTE                                    |                  |                |          |            | 1  |       |
| LT EPIDIDYMIS     | 0.69     | 0.139 | SKELETAL MUSCLE    |      | MICRO: INFILTRATION, SUBACUTE                                    |                  |                |          |            | 1  |       |
| RT CAUDA EPID     | 0.2517   | 0.051 | THYMUS GLAND       |      | MICRO: ATROPHY                                                   |                  |                |          |            | 1  |       |
| LT CAUDA EPID     | 0.3203   | 0.065 | THYROID GLANDS     |      | MICRO: HYPERTRHYPI, FOLLICULAR CELL                              |                  |                |          |            | 1  |       |
| THYMUS GLAND      | 0.2943   | 0.059 |                    |      | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED COLLOID |                  |                |          |            |    |       |
| ADRENAL GLANDS    | 0.0558   | 0.011 |                    |      |                                                                  |                  |                |          |            |    |       |
| THYROIDS/PARA     | 0.0286   | 0.006 | NO SIGNIFICANT     |      | GROSS: ADRENAL GLANDS                                            | AORTA            |                |          |            |    |       |
| FINAL BODY WT (G) | 4.95.    |       | CHANGES OBSERVED   |      | CECUM                                                            | COLON            |                |          |            |    |       |
|                   |          |       |                    |      | EYES/OPTIC N.                                                    | HEART            |                |          |            |    |       |
|                   |          |       |                    |      | KIDNEYS                                                          | LIVER            |                |          |            |    |       |
|                   |          |       |                    |      | NERVE, SCIATIC                                                   | PANCREAS         |                |          |            |    |       |
|                   |          |       |                    |      | RECTUM                                                           | PITUITARY        |                |          |            |    |       |
|                   |          |       |                    |      | SEMINAL VESICLES                                                 | SKELLETAL MUSCLE |                |          |            |    |       |
|                   |          |       |                    |      | SPLEEN                                                           | STOMACH          |                |          |            |    |       |
|                   |          |       |                    |      | THYROID GLANDS                                                   | LYMPH NODE, MAND |                |          |            |    |       |
|                   |          |       |                    |      | VAS DEFERENS                                                     | LT TESTIS        |                |          |            |    |       |
|                   |          |       |                    |      |                                                                  | URINARY BLADDER  |                |          |            |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 53

| ANIMAL NO.      | GROUP           | 4: 1000 MG/KG/DAY | MALE             | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: 92 | GRADE |
|-----------------|-----------------|-------------------|------------------|----------------|----------|----------------|----------|---------------|-------|
| MICRO: AORTA    |                 |                   |                  |                |          |                |          |               |       |
| COLON           | STERNEBRAE      | BRAIN             | CECUM            |                |          |                |          |               |       |
| ILEUM           | DUODENUM        | EYES OPTIC N.     | HEART            |                |          |                |          |               |       |
| ADRENAL         | JEJUNUM         | KIDNEYS           | LYMPH NODE, MES  |                |          |                |          |               |       |
| CORTEX          | ADRENAL MEDULLA | NERVE, SCIATIC    | STOMACH, GLD     |                |          |                |          |               |       |
| STOMACH, NONGLD | MARROW, STERN   | PANCREAS          | PARATHYROID      |                |          |                |          |               |       |
| RECTUM          | PITUITARY       | SAL. GLAND MAND   | SEMINAL VESICLES |                |          |                |          |               |       |
| SKIN            | SPINAL CORD     | SPLEEN            | LYMPH NODE, MAND |                |          |                |          |               |       |
| RT TESTIS       | TRACHEA         | VAS DEFERENS      | URINARY BLADDER  |                |          |                |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 54

| ANIMAL NO.        | 43372    | GROUP | 4: 1000 MG/KG/DAY | MALE                                                                 | SCHEDULED EUTH   | 07/26/00        | DATE OF DEATH:   | 07/26/00 | STUDY DAY: | 91      |
|-------------------|----------|-------|-------------------|----------------------------------------------------------------------|------------------|-----------------|------------------|----------|------------|---------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | COLON             | MICRO: HYPERPLASIA, LYMPHOID                                         |                  |                 |                  |          |            | GRADE 2 |
| BRAIN             | 2.13     | 0.258 | EYES/OPTIC N.     | MICRO: NO SIGNIFICANT CHANGES OBSERVED                               |                  |                 |                  |          |            |         |
| LIVER             | 24.94    | 4.192 | LIVER             | MICRO: ONE OPTIC NERVE EXAMINED; OTHER NOT IN PLANE; RECUT EVALUATED | 1                |                 |                  |          |            |         |
| KIDNEYS           | 3.57     | 0.600 | LUNGS             | MICRO: INFLAMMATION, SUBACUTE                                        |                  |                 |                  |          |            |         |
| HEART             | 1.66     | 0.279 | LUNGS             | GROSS: DARK RED                                                      |                  |                 |                  |          |            |         |
| SPILEN            | 0.80     | 0.134 | LUNGS             | MICRO: ALL LOBES                                                     |                  |                 |                  |          |            |         |
| PROSTATE          | 1.46     | 0.245 | LUNGS             | MICRO: MINERALIZATION, VASCULAR                                      |                  |                 |                  |          |            |         |
| RT TESTIS         | 1.60     | 0.269 |                   | INFLAMMATION, SUBACUTE                                               |                  |                 |                  |          |            |         |
| LT TESTIS         | 1.63     | 0.274 |                   | NO CORRELATE TO GROSS RED DISCOLORATION                              |                  |                 |                  |          |            |         |
| RT EPIDIDYMIS     | 0.75     | 0.126 | PARATHYROID       | MICRO: NO SIGNIFICANT CHANGES OBSERVED                               |                  |                 |                  |          |            |         |
| LT EPIDIDYMIS     | 0.72     | 0.121 |                   | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION              |                  |                 |                  |          |            |         |
| RT CAUDA EPID     | 0.3181   | 0.053 | THYMUS GLAND      | MICRO: HEMORRHAGE                                                    |                  |                 |                  |          |            |         |
| LT CAUDA EPID     | 0.3336   | 0.056 |                   | ATROPHY                                                              |                  |                 |                  |          |            |         |
| THYMUS GLAND      | 0.3051   | 0.051 | THYROID GLANDS    | MICRO: HYPERTROPHY, FOLLICULAR CELL COLLOID                          | 1                |                 |                  |          |            |         |
| ADRENAL GLANDS    | 0.0643   | 0.011 |                   | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED             |                  |                 |                  |          |            |         |
| THYROIDS/PARA     | 0.0160   | 0.003 | TRACHEA           | MICRO: DILATATION, GLANDULAR                                         |                  |                 |                  |          |            |         |
| FINAL BODY WT (G) | 595.     |       | NO SIGNIFICANT    |                                                                      |                  |                 |                  |          |            |         |
|                   |          |       | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS                                                | AORTA            | STERNEBRAE      | BRAIN            |          |            |         |
|                   |          |       |                   | CECUM                                                                | COLON            | DUODENUM        | ESOPHAGUS        |          |            |         |
|                   |          |       |                   | EYES/OPTIC N.                                                        | HEART            | ILEUM           | JEJUNUM          |          |            |         |
|                   |          |       |                   | KIDNEYS                                                              | LIVER            | LYMPH NODE, MES | NERVE, SCIATIC   |          |            |         |
|                   |          |       |                   | PANCREAS                                                             | RT EPIDIDYMIS    | LT EPIDIDYMIS   | RECTUM           |          |            |         |
|                   |          |       |                   | PITUITARY                                                            | PROSTATE         | SAL. GLAND MAND | SEMINAL VESICLES |          |            |         |
|                   |          |       |                   | SKELETAL MUSCLE                                                      | SKIN             | SPINAL CORD     | SPLLEEN          |          |            |         |
|                   |          |       |                   | STOMACH                                                              | LYMPH NODE, MAND | THYMUS GLAND    | THYROID GLANDS   |          |            |         |
|                   |          |       |                   | RT TESTIS                                                            | LT TESTIS        | TRACHEA         | VAS DEFERENS     |          |            |         |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

ANIMAL NO. 43372 GROUP 4: 1000 MG/KG/DAY MALE SCHEDULED EUTH 07/26/00

DATE OF DEATH: 07/26/00 STUDY DAY: 91  
GRADE: -

| MICRO           | URINARY BLADDER | STERNEBRAE       | BRAIN                      | EYES/OPTIC N. | CECUM           |
|-----------------|-----------------|------------------|----------------------------|---------------|-----------------|
| AORTA           |                 | ESOPHAGUS        |                            | KIDNEYS       | HEART           |
| DUODENUM        |                 | JEJUNUM          |                            |               | LYMPH NODE, MES |
| ILEUM           |                 |                  |                            |               |                 |
| ADRENAL CORTEX  |                 | ADRENAL MEDULLA  | NERVE, SCIATIC             |               | STOMACH, GLD    |
| STOMACH, NONGLD |                 | MARROW, STERN    | PANCREAS                   |               | PARATHYROID     |
| RT EPIDIDYMIS   |                 | RECTUM           | PITUITARY                  |               | PROSTATE        |
| SAL. GLAND MAND |                 | SEMINAL VESICLES | SKELETAL MUSCLE            |               | SKIN            |
| SPINAL CORD     |                 | SPLEEN           | LYMPH NODE, MAND RT TESTIS |               |                 |
| VAS DEFERENS    |                 | URINARY BLADDER  |                            |               |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE I.2.0 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 57

| ANIMAL NO.      | 43373 | GROUP | 4: 1000 MG/KG/DAY | MALE                  | SCHEDULED EUTH  | 07/26/00 | DATE OF DEATH:   | 07/26/00 | STUDY DAY: 91 | GRADE |
|-----------------|-------|-------|-------------------|-----------------------|-----------------|----------|------------------|----------|---------------|-------|
| EYES/OPTIC N.   |       |       |                   | HEART                 | ILEUM           |          | JEJUNUM          |          |               |       |
| LYMPH NODE, MES |       |       |                   | NERVE, SCIAATIC       | PANCREAS        |          | RT EPIDIDYMIS    |          |               |       |
| LT EPIDIDYMIS   |       |       |                   | RECTUM                | PITUITARY       |          | PROSTATE         |          |               |       |
| SAL. GLAND MAND |       |       |                   | SEMINAL VESICLES      | SKELETAL MUSCLE |          | SKIN             |          |               |       |
| SPINAL CORD     |       |       |                   | SPLLEEN               | STOMACH         |          | LYMPH NODE, MAND |          |               |       |
| THYMUS GLAND    |       |       |                   | THYROID GLANDS        | RT TESTIS       |          | LT TESTIS        |          |               |       |
| TRACHEA         |       |       |                   | VAS DEFERENS          | URINARY BLADDER |          |                  |          |               |       |
| MICRO:AORTA     |       |       |                   | STERNEBRAE            | BRAIN           |          | CECUM            |          |               |       |
| COLON           |       |       |                   | DUODENUM              | ESOPHAGUS       |          | EYES/OPTIC N.    |          |               |       |
| ILEUM           |       |       |                   | JEJUNUM               | KIDNEYS         |          | LYMPH NODE, MES  |          |               |       |
| ADRENAL CORTEX  |       |       |                   | ADRENAL MEDULLA       | NERVE, SCIATIC  |          | STOMACH, GLD     |          |               |       |
| MARROW, STERN   |       |       |                   | PANCREAS              | PARATHYROID     |          | RT EPIDIDYMIS    |          |               |       |
| RECTUM          |       |       |                   | PITUITARY             | SAL. GLAND MAND |          | SEMINAL VESICLES |          |               |       |
| SKELETAL MUSCLE |       |       |                   | SKIN                  | SPINAL CORD     |          | SPLEEN           |          |               |       |
| RT TESTIS       |       |       |                   | TRACHEA               | VAS DEFERENS    |          | URINARY BLADDER  |          |               |       |
| NOT EXAMINED    |       |       |                   | MICRO:STOMACH, NONGLD |                 |          |                  |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 58

| ANIMAL NO.        | 43377    | GROUP | 4: 1000 MG/KG/DAY | MALE                                                    | SCHEDULED EUTH   | 07/27/00        | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|-------------------|---------------------------------------------------------|------------------|-----------------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS           | MICRO: BASOPHILIC TUBULES                               |                  |                 |                |          |            |    |       |
| BRAIN             | 2.02     | 0.427 | LIVER             | MICRO: VACUOLATION, HEPATOCELLULAR                      |                  |                 |                |          |            |    |       |
| LIVER             | 18.35    | 3.879 |                   | PERIORTAL TO MIDZONAL,                                  |                  |                 |                |          |            |    |       |
| KIDNEYS           | 3.57     | 0.755 |                   | NECROSIS                                                |                  |                 |                |          |            |    |       |
| HEART             | 1.40     | 0.296 |                   | FOCAL                                                   |                  |                 |                |          |            |    |       |
| SPLEEN            | 0.75     | 0.159 |                   | PAS STAIN, NEGATIVE                                     |                  |                 |                |          |            |    |       |
| PROSTATE          | 1.57     | 0.332 |                   | OIL RED O, POSITIVE                                     |                  |                 |                |          |            |    |       |
| RT TESTIS         | 1.71     | 0.362 |                   | PERIORTAL TO MID-ZONAL; VACUOLES ARE OIL RED O POSITIVE |                  |                 |                |          |            |    |       |
| LT TESTIS         | 1.57     | 0.332 | LUNGS             | MICRO: MINERALIZATION, VASCULAR                         |                  |                 |                |          |            |    |       |
| RT EPIDIDYMIS     | 0.67     | 0.142 | PARATHYROID       | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  |                  |                 |                |          |            |    |       |
| LT EPIDIDYMIS     | 0.62     | 0.131 |                   | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION |                  |                 |                |          |            |    |       |
| RT CAUDA EPID     | 0.2509   | 0.053 | PROSTATE          | MICRO: INFLAMMATION, SUBACUTE                           |                  |                 |                |          |            |    |       |
| LT CAUDA EPID     | 0.2710   | 0.057 | SKIN              | GROSS: BROWN MATTING                                    |                  |                 |                |          |            |    |       |
| THYMUS GLAND      | 0.2617   | 0.055 |                   | ANOGENITAL                                              |                  |                 |                |          |            |    |       |
| ADRENAL GLANDS    | 0.0467   | 0.010 | SKIN              | GROSS: CLEAR MATTING                                    |                  |                 |                |          |            |    |       |
| THYROIDS/PARA     | 0.0315   | 0.007 | THYMUS GLAND      | MICRO: VENTRAL NECK                                     |                  |                 |                |          |            |    |       |
| FINAL BODY WT (G) | 4.73.    |       | THYROID GLANDS    | MICRO: HYPERTROPHY, FOLLICULAR CELL,                    |                  |                 |                |          |            |    |       |
|                   |          |       | NO SIGNIFICANT    |                                                         |                  |                 |                |          |            |    |       |
|                   |          |       | CHANGES OBSERVED  |                                                         |                  |                 |                |          |            |    |       |
|                   |          |       |                   | GROSS: ADRENAL GLANDS                                   | AORTA            | STERNEBRAE      |                |          |            |    |       |
|                   |          |       |                   | CECTUM                                                  | COLON            | ESOPHAGUS       |                |          |            |    |       |
|                   |          |       |                   | EYES/OPTIC N.                                           | HEART            | DUODENUM        |                |          |            |    |       |
|                   |          |       |                   | KIDNEYS                                                 | LIVER            | ILEUM           |                |          |            |    |       |
|                   |          |       |                   | NERVE SCATIC                                            | PANCREAS         | LYMPH NODE, MES |                |          |            |    |       |
|                   |          |       |                   | RECTUM                                                  | PITUITARY        | LT EPIDIDYMIS   |                |          |            |    |       |
|                   |          |       |                   | SEMINAL VESICLES                                        | SKELETAL MUSCLE  | PROSTATE        |                |          |            |    |       |
|                   |          |       |                   | STOMACH                                                 | LYMPH NODE, MAND | SPLEN           |                |          |            |    |       |
|                   |          |       |                   | RT TESTIS                                               | LT TESTIS        | THYMUS GLAND    |                |          |            |    |       |
|                   |          |       |                   |                                                         |                  | TRACHEA         |                |          |            |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 59

ANIMAL NO. 43377 GROUP 4: 1000 MG/KG/DAY MALE SCHEDULED EUTH 07/27/00 DATE OF DEATH: 07/27/00 STUDY DAY: 92 GRADE

| URINARY BLADDER | MICRO:AORTA      | STERNEBRAE                 | BRAIN          | CECUM           |
|-----------------|------------------|----------------------------|----------------|-----------------|
|                 | COLON            | DUODENUM                   | ESOPHAGUS      | EYES/OPTIC N.   |
|                 | HEART            | ILEUM                      | JEJUNUM        | LYMPH NODE, MES |
|                 | ADRENAL CORTEX   | ADRENAL MEDULLA            | NERVE, SCIATIC | STOMACH, GLD    |
|                 | STOMACH, NONGLD  | MARROW, STERN              | PANCREAS       | PARATHYROID     |
|                 | RT EPIDIDYMIS    | RECTUM                     | PITUITARY      | SAL. GLAND MAND |
|                 | SEMINAL VESICLES | SKELETAL MUSCLE            | SKIN           | SPINAL CORD     |
|                 | SPLEEN           | LYMPH NODE, MAND RT TESTIS |                | TRACHEA         |
| VAS DEFERENS    | URINARY BLADDER  |                            |                |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43397    | GROUP | 4:               | 1000 MG/KG/DAY                       | MALE            | SCHEDULED EUTH   | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 | GRADE |
|-------------------|----------|-------|------------------|--------------------------------------|-----------------|------------------|----------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS          | MICRO: INFILTRATION, SUBACUTE        |                 |                  |          |                |          |            |    |       |
| BRAIN             | 1.87     | 0.352 | LIVER            | MICRO: BASOPHILIC TUBULES            |                 |                  |          |                |          |            |    | 1     |
| LIVER             | 20.51    | 3.863 | LIVER            | MICRO: INFILTRATION, SUBACUTE        |                 |                  |          |                |          |            |    | 1     |
| KIDNEYS           | 3.58     | 0.674 |                  | VACUOLATION, HEPATOCELLULAR          |                 |                  |          |                |          |            |    | 1     |
| HEART             | 1.72     | 0.324 | ADRENAL CORTEX   | MICRO: HEMATOPOEISIS, EXTRAMEDULLARY |                 |                  |          |                |          |            |    | 1     |
| SPLEEN            | 1.03     | 0.194 | LUNGS            | MICRO: MINERALIZATION, VASCULAR      |                 |                  |          |                |          |            |    | 1     |
| PROSTATE          | 1.19     | 0.224 |                  | MICRO: INFLAMMATION, CHRONIC         |                 |                  |          |                |          |            |    | 1     |
| RT TESTIS         | 1.60     | 0.301 | STOMACH, NONGLD  | MICRO: CYST, KERATIN                 |                 |                  |          |                |          |            |    | 1     |
| LT TESTIS         | 1.64     | 0.309 |                  | AT LIMITING RIDGE                    |                 |                  |          |                |          |            |    | 2     |
| RT EPIDIDYMIS     | 0.75     | 0.141 | PANCREAS         | MICRO: HYPERPLASIA, DUCTAL           |                 |                  |          |                |          |            |    | 1     |
| LT EPIDIDYMIS     | 0.70     | 0.132 |                  | FOCAL                                |                 |                  |          |                |          |            |    |       |
| RT CAUDA EPID     | 0.3593   | 0.068 | SPLEEN           | MICRO: HEMATOPOEISIS, EXTRAMEDULLARY |                 |                  |          |                |          |            |    |       |
| LT CAUDA EPID     | 0.3147   | 0.059 | THYMUS GLAND     | MICRO: HEMORRHAGE                    |                 |                  |          |                |          |            |    |       |
| THYMUS GLAND      | 0.2877   | 0.054 |                  | ATROPHY                              |                 |                  |          |                |          |            |    | 1     |
| ADRENAL GLANDS    | 0.0563   | 0.011 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL         |                 |                  |          |                |          |            |    | 2     |
| THYROIDS/PARA     | 0.0214   | 0.004 | NO SIGNIFICANT   | GROSS: ADRENAL GLANDS                | AORTA           | STERNEBRAE       |          |                |          |            |    |       |
| FINAL BODY WT (G) | 531.     |       | CHANGES OBSERVED | CECUM                                | COLON           | DUODENUM         |          |                |          |            |    |       |
|                   |          |       |                  | EYES/OPTIC N.                        | HEART           | ILEUM            |          |                |          |            |    |       |
|                   |          |       |                  | KIDNEYS                              | LIVER           | LUNG             |          |                |          |            |    |       |
|                   |          |       |                  | NERVE, SCIATIC                       | PANCREAS        | LT EPIDIDYMIS    |          |                |          |            |    |       |
|                   |          |       |                  | RECTUM                               | PITUITARY       | PROSTATE         |          |                |          |            |    |       |
|                   |          |       |                  | SEMINAL VESICLES                     | SKELETAL MUSCLE | SKIN             |          |                |          |            |    |       |
|                   |          |       |                  | SPLEEN                               | STOMACH         | SPINAL CORD      |          |                |          |            |    |       |
|                   |          |       |                  | THYROID GLANDS                       | RT TESTIS       | THYMUS GLAND     |          |                |          |            |    |       |
|                   |          |       |                  | VAS DEFERENS                         | URINARY BLADDER | TRACHEA          |          |                |          |            |    |       |
|                   |          |       |                  | MICRO: AORTA                         | STERNEBRAE      | BRAIN            |          |                |          |            |    |       |
|                   |          |       |                  | COLON                                | DUODENUM        | ESOPHAGUS        |          |                |          |            |    |       |
|                   |          |       |                  | HEART                                | ILEUM           | JEJUNUM          |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 | LYMPH NODE, MES  |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 | PROSTATE         |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 | SKIN             |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 | LYMPH NODE, MAND |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 | TESTIS           |          |                |          |            |    |       |
|                   |          |       |                  |                                      |                 |                  |          |                |          |            |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43397 | GROUP | 4: | 1000 MG/KG/DAY | MALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:  | 07/28/00         | STUDY DAY:       | 93              | GRADE |
|------------|-------|-------|----|----------------|------|----------------|----------|-----------------|------------------|------------------|-----------------|-------|
|            |       |       |    |                |      |                |          | ADRENAL MEDULLA | NERVE, SCIATIC   | STOMACH, GLD     | MARROW, SPERN   |       |
|            |       |       |    |                |      |                |          | PARATHYROID     | RT EPIDIDYMIS    | RECTUM           | PITUITARY       |       |
|            |       |       |    |                |      |                |          | PROSTATE        | SAIL. GLAND MAND | SEMINAL VESICLES | SKELETAL MUSCLE |       |
|            |       |       |    |                |      |                |          | SKIN            | SPINAL CORD      | LYMPH NODE, MAND | RT TESTIS       |       |
|            |       |       |    |                |      |                |          | TRACHEA         | VAS DEFERENS     | URINARY BLADDER  |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | GROUP | 1 : | 0 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|------------|-------|-----|-------------|--------|----------------|----------|----------------|----------|------------|----|-------|
|------------|-------|-----|-------------|--------|----------------|----------|----------------|----------|------------|----|-------|

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43435    | GROUP | 1:                                                 | 0 MG/KG/DAY                                             | FEMALE                        | SCHEDULED EUTH | 07/28/00        | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 | GRADE |
|-------------------|----------|-------|----------------------------------------------------|---------------------------------------------------------|-------------------------------|----------------|-----------------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS                                            | GROSS: DARK RED AREA(S)                                 |                               |                |                 |                |          |            |    | P     |
| BRAIN             | 2.01     | 0.638 | MULTIPLE, IRREGULARLY SHAPED, IN CORTEX, BILATERAL |                                                         |                               |                |                 |                |          |            |    |       |
| LIVER             | 8.72     | 2.768 | KIDNEYS                                            | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  |                               |                |                 |                |          |            |    |       |
| KIDNEYS           | 2.25     | 0.714 |                                                    | NO CORRELATE TO GROSS RED AREAS                         |                               |                |                 |                |          |            |    |       |
| HEART             | 1.00     | 0.317 | LIVER                                              | MICRO: INFILTRATION, SUBACUTE                           |                               |                |                 |                |          |            |    | 1     |
| SPLEEN            | 0.58     | 0.184 | LUNGS                                              | MICRO: INFILTRATION, SUBACUTE                           |                               |                |                 |                |          |            |    | 1     |
| UTERUS/CX         | 1.23     | 0.390 |                                                    | MINERALIZATION, VASCULAR                                |                               |                |                 |                |          |            |    | 1     |
| OVARIES/OVIDUCTS  | 0.1510   | 0.048 | PARATHYROID                                        | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  |                               |                |                 |                |          |            |    |       |
| THYMUS GLAND      | 0.3599   | 0.114 | LYMPH NODE, MAND THYMUS GLAND                      | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION |                               |                |                 |                |          |            |    |       |
| ADRENAL GLANDS    | 0.0553   | 0.018 |                                                    | MICRO: HYPERPLASTA, LYMPHOID                            |                               |                |                 |                |          |            |    | 1     |
| THYROIDS/PARA     | 0.0184   | 0.006 |                                                    | MICRO: ATROPHY                                          |                               |                |                 |                |          |            |    | 1     |
| FINAL BODY WT (G) | 315.     |       | THYROID GLANDS                                     | MICRO: CYST, ULTIMOBRANCHIAL HEMORRHAGE                 |                               |                |                 |                |          |            |    | 1     |
| UTERUS            |          |       | UTERUS                                             | MICRO: CLEAR FLUID CONTENTS                             |                               |                |                 |                |          |            |    | 2     |
|                   |          |       |                                                    | GROSS: LUMEN, LUMEN BOTH HORNS                          |                               |                |                 |                |          |            |    | P     |
|                   |          |       |                                                    | MICRO: DILATATION, LUMEN WITH GROSS FLUID CONTENTS      |                               |                |                 |                |          |            |    |       |
|                   |          |       | NO SIGNIFICANT CHANGES OBSERVED                    | NO SIGNIFICANT CHANGES OBSERVED                         | GROSS: ADRENAL GLANDS         | AORTA          | STERNEBRAE      | OVIDUCTS       | OVIDUCTS |            |    |       |
|                   |          |       |                                                    |                                                         | BRAIN                         | CBC/COM        | COLON           | DUODENUM       | DUODENUM |            |    |       |
|                   |          |       |                                                    |                                                         | ESOPHAGUS                     | EYES/OPTIC N.  | HEART           | ILEUM          | ILEUM    |            |    |       |
|                   |          |       |                                                    |                                                         | JEJUNUM                       | LIVER          | LYMPH NODE, MES | LUNGS          | LUNGS    |            |    |       |
|                   |          |       |                                                    |                                                         | MAMMARY GLAND                 | NERVE, SCIATIC | OVARIES         | PANCREAS       | PANCREAS |            |    |       |
|                   |          |       |                                                    |                                                         | RECTUM                        | PITUITARY      | SAL. GLAND MAND | SKELETAL       | SKELETAL |            |    |       |
|                   |          |       |                                                    |                                                         | SKIN                          | SPINAL CORD    | SPLEEN          | STOMACH        | STOMACH  |            |    |       |
|                   |          |       |                                                    |                                                         | LYMPH NODE, MAND THYMUS GLAND | THYROID GLAND  | CERVIX          | TRACHEA        | TRACHEA  |            |    |       |
|                   |          |       |                                                    |                                                         | URINARY BLADDER               | Vagina         | CERVIX          | BRAIN          | BRAIN    |            |    |       |
|                   |          |       |                                                    |                                                         | MICRO: AORTA                  | STERNEBRAE     | OVIDUCTS        | DUODENUM       | DUODENUM |            |    |       |
|                   |          |       |                                                    |                                                         | CECUM                         | COLON          |                 |                |          |            |    |       |

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43435 | GROUP | 1: | 0 | MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:  | 07/28/00        | STUDY DAY:      | 93              | GRADE |
|------------|-------|-------|----|---|-----------|--------|----------------|----------|-----------------|-----------------|-----------------|-----------------|-------|
|            |       |       |    |   |           |        |                |          | EYES/OPTIC N.   | HEART           | ILEUM           | JEJUNUM         |       |
|            |       |       |    |   |           |        |                |          | KIDNEYS         | LYMPH NODE, MES | ADRENAL CORTEX  | MAMMARY GLAND   |       |
|            |       |       |    |   |           |        |                |          | ADRENAL MEDULLA | NERVE, SCIATIC  | STOMACH, GLD    | STOMACH, NONGLD |       |
|            |       |       |    |   |           |        |                |          | MARROW, STERN   | OVARIES         | PANCREAS        | PARATHYROID     |       |
|            |       |       |    |   |           |        |                |          | RECTUM          | PITUITARY       | SAL. GLAND MAND | SKELETAL MUSCLE |       |
|            |       |       |    |   |           |        |                |          | SKIN            | SPINAL CORD     | SPLEEN          | TRACHEA         |       |
|            |       |       |    |   |           |        |                |          | URINARY BLADDER | VAGINA          | CERVIX          |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.          | 43436  | GROUP    | 1:   | 0 MG/KG/DAY      | FEMALE | SCHEDULED EUTH                | 07/28/00      | DATE OF DEATH:   | 07/28/00 | STUDY DAY:      | 93 | GRADE |
|---------------------|--------|----------|------|------------------|--------|-------------------------------|---------------|------------------|----------|-----------------|----|-------|
| ORGAN               | WEIGHT | ABS. (G) | REL. | GENERAL COMMENT  | GROSS: | MECHANICAL TRAUMA             |               |                  |          | P               |    |       |
| BRAIN               | 1.87   | 0.625    |      |                  |        | DISTAL TAIL BROKEN            |               |                  |          |                 |    |       |
| LIVER               | 8.54   | 2.856    |      | ESOPHAGUS        | MICRO: | DEGENERATION                  |               |                  |          |                 | 2  |       |
| KIDNEYS             | 2.27   | 0.759    |      |                  |        | FOCAL IN MUSCLE WALL          |               |                  |          |                 |    |       |
| HEART               | 1.24   | 0.415    |      | HARDERIAN GLANDS | GROSS: | DARK RED AREA (S)             |               |                  |          | P               |    |       |
| SPLEEN              | 0.63   | 0.211    |      |                  |        | MULTIPLE, PINPOINT, BILATERAL |               |                  |          |                 |    |       |
| UTERUS/CX           | 0.84   | 0.281    |      | KIDNEYS          | MICRO: | MULTILAMELLAR BODY            |               |                  |          | P               |    |       |
| OVARIES/OVIDUCTS    | 0.1664 | 0.056    |      |                  |        |                               |               |                  |          |                 | 1  |       |
| THYMUS GLAND        | 0.2525 | 0.084    |      | LIVER            | MICRO: | MINERALIZATION, PELVIC        |               |                  |          |                 | 1  |       |
| ADRENAL GLANDS      | 0.0782 | 0.026    |      |                  |        | INFILTRATION, SUBACUTE        |               |                  |          |                 | 2  |       |
| THYROID/ PARA       | 0.0200 | 0.007    |      |                  |        | PAS STAIN, NEGATIVE           |               |                  |          | P               |    |       |
| FINAL BODY WT (G)   | 299.   |          |      | LUNGS            | MICRO: | OIL RED O, POSITIVE           |               |                  |          |                 | 2  |       |
|                     |        |          |      |                  |        | PERIORTAL TO MITZONAL         |               |                  |          |                 |    |       |
| OVARIES             |        |          |      |                  | MICRO: | INFLAMMATION, CHRONIC         |               |                  |          |                 | 1  |       |
| THYMUS GLAND        |        |          |      |                  |        | HISTIOCYTOSIS, ALVEOLAR       |               |                  |          |                 | 1  |       |
| NO SIGNIFICANT      |        |          |      |                  | MICRO: | ATROPHY                       |               |                  |          |                 | 1  |       |
| NO CHANGES OBSERVED |        |          |      |                  |        |                               |               |                  |          |                 | 2  |       |
|                     |        |          |      |                  | GROSS: | ADRENAL GLANDS                | AORTA         | STERNEBRAE       |          | OVIDUCTS        |    |       |
|                     |        |          |      |                  |        | BRAIN                         | CECUM         | COLON            |          | DUODENUM        |    |       |
|                     |        |          |      |                  |        | ESOPHAGUS                     |               | HEART            |          | ILEUM           |    |       |
|                     |        |          |      |                  |        | JETJUNUM                      | EYES/OPTIC N. | KIDNEYS          |          | LYMPH NODE, MES |    |       |
|                     |        |          |      |                  |        | LUNGS                         |               | MAMMARY GLAND    |          | OVARIES         |    |       |
|                     |        |          |      |                  |        | PANCREAS                      |               | RECTUM           |          | PITUITARY       |    |       |
|                     |        |          |      |                  |        | SKELETAL MUSCLE               |               | SKIN             |          | SPINAL CORD     |    |       |
|                     |        |          |      |                  |        | STOMACH                       |               | LYMPH NODE, MAND |          | THYMUS GLAND    |    |       |
|                     |        |          |      |                  |        | TRACHEA                       |               | URINARY BLADDER  |          | VAGINA          |    |       |
|                     |        |          |      |                  |        | CERVIX                        |               | UTERUS           |          |                 |    |       |
|                     |        |          |      |                  | MICRO: | AORTA                         | STERNEBRAE    |                  |          | BRAIN           |    |       |
|                     |        |          |      |                  |        | CECUM                         | COLON         |                  |          | EYES/OPTIC N.   |    |       |
|                     |        |          |      |                  |        | HEART                         | ILEUM         |                  |          | LYMPH NODE, MES |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90 DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43436 | GROUP | 1: | 0 | MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: 93 | GRADE |
|------------|-------|-------|----|---|-----------|--------|----------------|----------|----------------|----------|---------------|-------|
|            |       |       |    |   |           |        |                |          |                |          |               |       |

ADRENAL CORTEX MAMMARY GLAND ADRENAL MEDULLA NERVE SCIATIC  
STOMACH, GLD STOMACH, NONGLD MARROW, STERN PANCREAS  
PARATHYROID RECTUM PITUITARY SAL. GLAND MAND  
SKELETAL MUSCLE SKIN SPINAL CORD SPLEEN  
LYMPH NODE, MAND THYROID GLANDS TRACHEA URINARY BLADDER  
UTERUS VAGINA CERVIX

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 71

| ANIMAL NO.                      | 43467    | GROUP | 1:                           | 0 MG/KG/DAY                                                                             | FEMALE          | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91    |
|---------------------------------|----------|-------|------------------------------|-----------------------------------------------------------------------------------------|-----------------|----------------|----------|----------------|----------|------------|-------|
| ORGAN WEIGHT                    | ABS. (G) | REL.  | EYES/OPTIC N.                | MICRO: NO SIGNIFICANT CHANGES OBSERVED<br>ONE OPTIC NERVE EXAMINED; OTHER NOT IN PLANE; | RECUT EVALUATED |                |          |                |          |            | GRADE |
| BRAIN                           | 2.01     | 0.684 | KIDNEYS                      | GROSS: DEPRESSED AREA (S)<br>SEVERAL, PINPOINT TO 1 MM IN DIAMETER, IN CORTEX, RIGHT    | P               |                |          |                |          |            |       |
| LIVER                           | 8.95     | 3.044 | KIDNEYS                      | MICRO: BASOPHILIC TUBULES<br>MINERALIZATION, PAPILLARY TUBULAR                          |                 |                |          |                |          |            | 1     |
| KIDNEYS                         | 2.67     | 0.908 | KIDNEYS                      | INFLAMMATION, SUBACUTE                                                                  |                 |                |          |                |          |            | 1     |
| HEART                           | 1.09     | 0.371 | UTERUS/CX                    | 0.197                                                                                   |                 |                |          |                |          |            | 1     |
| SPLEEN                          | 0.63     | 0.214 | OVARIES/OVIDUCTS             | 0.052                                                                                   |                 |                |          |                |          |            | 1     |
| UTERUS/CX                       | 0.58     | 0.197 | THYMUS GLAND                 | 0.1519                                                                                  |                 |                |          |                |          |            | 1     |
| OVARIES/OVIDUCTS                | 0.1519   | 0.052 | ADRENAL GLANDS               | 0.3199                                                                                  |                 |                |          |                |          |            | 1     |
| THYMUS GLAND                    | 0.3199   | 0.109 | THYROID GLANDS               | 0.0810                                                                                  |                 |                |          |                |          |            | 1     |
| ADRENAL GLANDS                  | 0.0810   | 0.028 | THYROIDS/PARA                | 0.0189                                                                                  |                 |                |          |                |          |            | 1     |
| THYROIDS/PARA                   | 0.0189   | 0.006 | FINAL BODY WT (G)            | 294.                                                                                    |                 |                |          |                |          |            | 1     |
| LYMPH NODE, MAND                |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| THYMUS GLAND                    |          |       | MICRO: HYPERPLASIA, LYMPHOID | MICRO: ATROPHY                                                                          |                 |                |          |                |          |            | 1     |
| NO SIGNIFICANT CHANGES OBSERVED |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| AORTA                           |          |       | GROSS: ADRENAL GLANDS        | AORTA                                                                                   |                 |                |          |                |          |            |       |
| CECTUM                          |          |       | BRAIN                        | CECTUM                                                                                  |                 |                |          |                |          |            |       |
| ESOPHAGUS                       |          |       | ESOPHAGUS                    | EYES/OPTIC N.                                                                           |                 |                |          |                |          |            |       |
| JEJUNUM                         |          |       | LIVER                        | LIVER                                                                                   |                 |                |          |                |          |            |       |
| MAMMARY GLAND                   |          |       | MAMMARY GLAND                | NERVE, SCIATIC                                                                          |                 |                |          |                |          |            |       |
| RECTUM                          |          |       | RECTUM                       | PITUITARY                                                                               |                 |                |          |                |          |            |       |
| SKIN                            |          |       | SKIN                         | SPINAL CORD                                                                             |                 |                |          |                |          |            |       |
| LYMPH NODE, MAND                |          |       | LYMPH NODE, MAND             | THYMUS GLAND                                                                            |                 |                |          |                |          |            |       |
| URINARY BLADDER                 |          |       | URINARY BLADDER              | UTERUS                                                                                  |                 |                |          |                |          |            |       |
| MICRO-AORTA                     |          |       | MICRO-AORTA                  | STERNEBRAE                                                                              |                 |                |          |                |          |            |       |
| CECTUM                          |          |       | CECTUM                       | COLON                                                                                   |                 |                |          |                |          |            |       |
| EYES/OPTIC N.                   |          |       | EYES/OPTIC N.                | HEART                                                                                   |                 |                |          |                |          |            |       |
| LYMPH NODE, MES                 |          |       | LYMPH NODE, MES              | ADRENAL CORTEX                                                                          |                 |                |          |                |          |            |       |
|                                 |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| STERNEBRAE                      |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| COLON                           |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| HEART                           |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| LYMPH NODE, MES                 |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| NERVE, SCIATIC                  |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| PITUITARY                       |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| SAL. GLAND MAND                 |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| SPLEEN                          |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| THYROID GLANDS                  |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| UTERUS                          |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| VAGINA                          |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| OVIDUCTS                        |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| DUODENUM                        |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| ILEUM                           |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| STOMACH                         |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| SKELETAL MUSCLE                 |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| TRACHEA                         |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| CERVIX                          |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| BRAIN                           |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| ESOPHAGUS                       |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| JEJUNUM                         |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |
| ADRENAL MEDULLA                 |          |       |                              |                                                                                         |                 |                |          |                |          |            |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43467 | GROUP | 1: | 0 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH:                                                           | 07/26/00                                                        | STUDY DAY:                                                                    | 91                                                   | GRADE |
|------------|-------|-------|----|-------------|--------|----------------|----------|--------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------|-------|
|            |       |       |    |             |        |                |          | NERVE, SCIATIC<br>OVARIES<br>PITUITARY<br>SPINAL CORD<br>URINARY BLADDER | STOMACH, GLD<br>PANCREAS<br>SAL. GLAND MAND<br>SPLEEN<br>UTERUS | STOMACH, NONGLD<br>PARATHYROID<br>SKELETAL MUSCLE<br>THYROID GLANDS<br>VAGINA | MARROW, STERN<br>RECTUM<br>SKIN<br>TRACHEA<br>CERVIX |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 73

| ANIMAL NO.        | 43474    | GROUP | 1:               | 0 MG/KG/DAY                                             | FEMALE           | SCHEDULED EUTH   | 07/26/00        | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 | GRADE |
|-------------------|----------|-------|------------------|---------------------------------------------------------|------------------|------------------|-----------------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS          | MICRO: MINERALIZATION, PAPILLARY TUBULAR                |                  |                  |                 |                |          |            |    | 3     |
| BRAIN             | 1.68     | 0.734 | LIVER            | MICRO: VACUOLATION, HEPATOCELLULAR                      |                  |                  |                 |                |          |            |    | 1     |
| LIVER             | 6.68     | 2.917 | LUNGS            | INFILTRATION, SUBACUTE                                  |                  |                  |                 |                |          |            |    | 1     |
| KIDNEYS           | 1.87     | 0.817 | MAMMARY GLAND    | MICRO: MINERALIZATION, VASCULAR                         |                  |                  |                 |                |          |            |    | 1     |
| HEART             | 0.90     | 0.393 | SPLEEN           | MICRO: NOT EXAMINED                                     |                  |                  |                 |                |          |            |    |       |
| UTERUS/CX         | 0.44     | 0.192 | PARATHYROID      | NOT IN PLANE; RECENT EVALUATED                          |                  |                  |                 |                |          |            |    |       |
| OVARIES/OVIDUCTS  | 0.43     | 0.188 | THYMUS GLAND     | MICRO: NO SIGNIFICANT CHANGES OBSERVED                  |                  |                  |                 |                |          |            |    |       |
| THYMUS GLAND      | 0.1192   | 0.052 | ATROPHY          | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION |                  |                  |                 |                |          |            |    | 1     |
| ADRENAL GLANDS    | 0.1848   | 0.081 | NO SIGNIFICANT   | MICRO: HEMORRHAGE                                       |                  |                  |                 |                |          |            |    | 1     |
| THYROID/ PARA     | 0.0666   | 0.029 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                   | AORTA            | STERNEBRAE       |                 |                |          |            |    |       |
| FINAL BODY WT (G) | 0.0151   | 0.007 |                  | BRAIN                                                   | CECUM            | COLON            | OVIDUCTS        |                |          |            |    |       |
|                   | 229.     |       |                  | ESOPHAGUS                                               | EYES/OPTIC N.    | HEART            | DUODENUM        |                |          |            |    |       |
|                   |          |       |                  | JEJUNUM                                                 | KIDNEYS          | LIVER            | ILEUM           |                |          |            |    |       |
|                   |          |       |                  | LUNGS                                                   | MAMMARY GLAND    | NERVE, SCIATIC   | LYMPH NODE, MES |                |          |            |    |       |
|                   |          |       |                  | PANCREAS                                                | RECTUM           | PITUITARY        | OVARIES         |                |          |            |    |       |
|                   |          |       |                  | SKELETAL MUSCLE                                         | SKIN             | SPINAL CORD      | SAL. GLAND MAND |                |          |            |    |       |
|                   |          |       |                  | STOMACH                                                 | LYMPH NODE, MAND | THYROID GLAND    | SPLEEN          |                |          |            |    |       |
|                   |          |       |                  | TRACHEA                                                 | URINARY BLADDER  | UTERUS           | THYROID GLANDS  |                |          |            |    |       |
|                   |          |       |                  | CERVIX                                                  | STERNEBRAE       | VAGINA           | VAGINA          |                |          |            |    |       |
|                   |          |       |                  | MICRO: AORTA                                            | CECUM            |                  |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | EYES/OPTIC N.    |                  |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | LYMPH NODE, MES  |                  |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | STOMACH, GLD     | ADRENAL CORTEX   |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | PANCREAS         | STOMACH, NONGLD  |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | SAL. GLAND MAND  | PARATHYROID      |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | SPLEEN           | SKELLETAL MUSCLE |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         | URINARY BLADDER  | LYMPH NODE, MAND |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         |                  | THYROID GLANDS   |                 |                |          |            |    |       |
|                   |          |       |                  |                                                         |                  | UTERUS           | VAGINA          |                |          |            |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 1120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43474 | GROUP | 1: | 0 | MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 | GRADE |
|------------|-------|-------|----|---|-----------|--------|----------------|----------|----------------|----------|------------|----|-------|
|            |       |       |    |   |           |        |                |          |                |          |            |    |       |

NOT EXAMINED

MICRO:MAMMARY GLAND

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43483    | GROUP | 1:                    | 0 MG/KG/DAY                                               | FEMALE         | SCHEDULED EUTH  | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|-----------------------|-----------------------------------------------------------|----------------|-----------------|----------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | ESOPHAGUS             | MICRO: DEGENERATION                                       |                |                 |          |                |          |            |    | 1     |
| BRAIN             | 1.90     | 0.717 |                       | FOCAL IN MUSCLE WALL                                      |                |                 |          |                |          |            |    | 1     |
| LIVER             | 8.17     | 3.083 | LIVER                 | MICRO: INFILTRATION, SUBACUTE                             |                |                 |          |                |          |            |    | 1     |
| KIDNEYS           | 1.95     | 0.736 | LUNGS                 | MICRO: INFILTRATION, CHRONIC                              |                |                 |          |                |          |            |    | 1     |
| HEART             | 1.07     | 0.404 |                       | HISTIOCYTOSIS, ALVEOLAR                                   |                |                 |          |                |          |            |    | 1     |
| SPLEEN            | 0.39     | 0.147 |                       | AGGREGATES PRESENT                                        |                |                 |          |                |          |            |    | 1     |
| UTERUS/CX         | 0.57     | 0.215 |                       | INFLAMMATION, GRANULOMATOUS                               |                |                 |          |                |          |            |    | 1     |
| OVARIES/OVIDUCTS  | 0.1369   | 0.052 |                       | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                |                 |          |                |          |            |    | 1     |
| THYMUS GLAND      | 0.2017   | 0.076 |                       | AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES          |                |                 |          |                |          |            |    | 1     |
| ADRENAL GLANDS    | 0.0718   | 0.027 | PARTHYROID            | MICRO: NO SIGNIFICANT CHANGES OBSERVED                    |                |                 |          |                |          |            |    | 1     |
| THYROID/PARA      | 0.0220   | 0.008 |                       | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION   |                |                 |          |                |          |            |    | 1     |
| FINAL BODY WT (G) | 265.     |       | THYMUS GLAND          | MICRO: ATROPHY                                            |                |                 |          |                |          |            |    | 1     |
|                   |          |       | NO SIGNIFICANT        |                                                           |                |                 |          |                |          |            |    |       |
|                   |          |       | CHANGES OBSERVED      |                                                           |                |                 |          |                |          |            |    |       |
|                   |          |       | GROSS: ADRENAL GLANDS | AORTA                                                     | STERNEBRAE     | OVIDUCTS        |          |                |          |            |    |       |
|                   |          |       | BRAIN                 | CECUM                                                     | COLON          | DUODENUM        |          |                |          |            |    |       |
|                   |          |       | ESOPHAGUS             | JEJUNUM                                                   | HEART          | ILEUM           |          |                |          |            |    |       |
|                   |          |       |                       | KIDNEYS                                                   | LIVER          | LYMPH NODE, MES |          |                |          |            |    |       |
|                   |          |       | LUNGS                 | MAMMARY GLAND                                             | NERVE, SCIATIC | OVARIES         |          |                |          |            |    |       |
|                   |          |       | PANCREAS              | RECTUM                                                    | PITUITARY      | SAL. GLAND MAND |          |                |          |            |    |       |
|                   |          |       | SKELETAL MUSCLE       | SKIN                                                      | SPINAL CORD    | SPLAEN          |          |                |          |            |    |       |
|                   |          |       | STOMACH               | URINARY NODE, MAND                                        | THYMUS GLAND   | THYROID GLANDS  |          |                |          |            |    |       |
|                   |          |       | TRACHEA               | URINARY BLADDER                                           | UTERUS         | VAGINA          |          |                |          |            |    |       |
|                   |          |       | CERVIX                |                                                           |                |                 |          |                |          |            |    |       |
|                   |          |       | MICRO: AORTA          | STERNEBRAE                                                | OVIDUCTS       | BRAIN           |          |                |          |            |    |       |
|                   |          |       | CECUM                 | COLON                                                     | EYES/OPTIC N.  | EYES/OPTIC N.   |          |                |          |            |    |       |
|                   |          |       | HEART                 | ILEUM                                                     | KIDNEYS        | KIDNEYS         |          |                |          |            |    |       |
|                   |          |       | LYMPH NODE,           | MES                                                       | MAMMARY GLAND  | ADRENAL MEDULLA |          |                |          |            |    |       |

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43483 | GROUP | 1: | 0 | MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH:  | 07/27/00         | STUDY DAY:     | 92     | GRADE |
|------------|-------|-------|----|---|-----------|--------|----------------|----------|-----------------|------------------|----------------|--------|-------|
|            |       |       |    |   |           |        |                |          | STOMACH, NONGLD | STOMACH, NONGLD  | MARROW,        | STERN  |       |
|            |       |       |    |   |           |        |                |          | PANCREAS        | PARATHYROID      | RECTUM,        |        |       |
|            |       |       |    |   |           |        |                |          | SAL. GLAND MAND | SKELETAL MUSCLE  | SKIN           |        |       |
|            |       |       |    |   |           |        |                |          | SPLEEN          | LYMPH NODE, MAND | THYROID GLANDS |        |       |
|            |       |       |    |   |           |        |                |          | SPINAL CORD     | URINARY BLADDER  | UTERUS         | VAGINA |       |
|            |       |       |    |   |           |        |                |          | TRACHEA         |                  |                |        |       |
|            |       |       |    |   |           |        |                |          | CERVIX          |                  |                |        |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.                      | 43497    | GROUP | 1:                                 | 0 MG/KG/DAY | FEMALE                | SCHEDULED EUTH                          | 07/28/00        | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 |
|---------------------------------|----------|-------|------------------------------------|-------------|-----------------------|-----------------------------------------|-----------------|----------------|----------|------------|----|
| ORGAN WEIGHT                    | ABS. (G) | REL.  | HEART                              |             | MICRO:                | INFLAMMATION                            |                 |                |          | GRADE      |    |
| BRAIN                           | 1.85     | 0.645 |                                    |             |                       |                                         |                 |                |          |            | 2  |
| LIVER                           | 8.19     | 2.854 | LIVER                              |             | MICRO:                | INFILTRATION, FOCAL                     |                 |                |          |            | 1  |
| KIDNEYS                         | 2.02     | 0.704 |                                    |             |                       | PAS STAIN, SUBACUTE                     |                 |                |          |            | P  |
| HEART                           | 1.07     | 0.373 |                                    |             |                       | OIL RED O, NEGATIVE                     |                 |                |          |            | 1  |
| SPLEEN                          | 0.56     | 0.195 |                                    |             |                       | PERIORTAL TO MIDZONAL                   |                 |                |          |            |    |
| UTERUS/OVIDUCTS                 | 1.13     | 0.394 | PARATHYROID                        |             | MICRO:                | NOT EXAMINED                            |                 |                |          |            |    |
| OVARIES/OVIDUCTS                | 0.2050   | 0.071 |                                    |             |                       | NEITHER PARATHYROID IN PLANE OF SECTION |                 |                |          |            |    |
| THYMUS GLAND                    | 0.1640   | 0.057 | THYMUS GLAND                       |             | MICRO:                | HEMORRHAGE                              |                 |                |          |            |    |
| ADRENAL GLANDS                  | 0.0777   | 0.027 |                                    |             |                       | ATROPHY                                 |                 |                |          |            |    |
| THYROID/ PARA<br>THYROIDS/ PARA | 0.0127   | 0.004 | UTERUS                             |             | MICRO:                | DILATATION, LUMEN                       |                 |                |          |            | 1  |
| FINAL BODY WT (G)               | 287.     |       | NO SIGNIFICANT<br>CHANGES OBSERVED |             | GROSS: ADRENAL GLANDS | AORTA                                   | STERNEBRAE      |                |          |            |    |
|                                 |          |       |                                    |             | BRAIN                 | CECUM                                   | COLON           |                |          |            |    |
|                                 |          |       |                                    |             | ESOPHAGUS             | EYES/OPTIC N.                           | HEART           |                |          |            |    |
|                                 |          |       |                                    |             | JEJUNUM               | KIDNEYS                                 | LIVER           |                |          |            |    |
|                                 |          |       |                                    |             | LUNGS                 | MAMMARY GLAND                           | LYMPH NODE, MES |                |          |            |    |
|                                 |          |       |                                    |             | PANCREAS              | RECTUM                                  | OVARIES         |                |          |            |    |
|                                 |          |       |                                    |             | SKELETAL MUSCLE       | SKIN                                    | PITUITARY       |                |          |            |    |
|                                 |          |       |                                    |             | STOMACH               | LYMPH NODE, MAND                        | SPINAL CORD     |                |          |            |    |
|                                 |          |       |                                    |             | TRACHEA               | URINARY BLADDER                         | THYMUS GLAND    |                |          |            |    |
|                                 |          |       |                                    |             | CERVIX                | UTERUS                                  | VAGINA          |                |          |            |    |
|                                 |          |       |                                    |             | MICRO: AORTA          | STERNEBRAE                              | OVIDUCTS        |                |          |            |    |
|                                 |          |       |                                    |             | CECUM                 | COLON                                   | DUODENUM        |                |          |            |    |
|                                 |          |       |                                    |             | EYES/OPTIC N.         | ILEUM                                   | JEJUNUM         |                |          |            |    |
|                                 |          |       |                                    |             | LYMPH NODE, MES       | ADRENAL CORTEX                          | LUNGS           |                |          |            |    |
|                                 |          |       |                                    |             | ADRENAL MEDULLA       | NERVE, SCIATIC                          | STOMACH, GLD    |                |          |            |    |
|                                 |          |       |                                    |             | MARROW, STERN         | OVARIES                                 | PANCREAS        |                |          |            |    |
|                                 |          |       |                                    |             | PITUITARY             | SAL. GLAND                              | RECTUM          |                |          |            |    |
|                                 |          |       |                                    |             |                       |                                         | SKIN            |                |          |            |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43497 | GROUP | 1: | 0 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 | PAGE |
|------------|-------|-------|----|-------------|--------|----------------|----------|----------------|----------|------------|----|------|
| GRADE      |       |       |    |             |        |                |          |                |          |            |    |      |

|              | SPINAL CORD | SPLEEN          | LYMPH NODE | MAND THYROID GLANDS |
|--------------|-------------|-----------------|------------|---------------------|
| TRACHEA      |             | URINARY BLADDER | VAGINA     | CERVIX              |
| NOT EXAMINED |             |                 |            |                     |

MICRO: PARATHYROID

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 79

| ANIMAL NO.        | 43501    | GROUP | 1:             | 0 MG/KG/DAY | FEMALE                                                                 | SCHEDULED EUTH                          | 07/28/00       | DATE OF DEATH: | 07/28/00        | STUDY DAY: | 93 |
|-------------------|----------|-------|----------------|-------------|------------------------------------------------------------------------|-----------------------------------------|----------------|----------------|-----------------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | ADRENAL GLANDS | MICRO:      | NO SIGNIFICANT CHANGES OBSERVED                                        |                                         |                |                |                 | GRADE      |    |
| BRAIN             | 1.80     | 0.610 |                | MICRO:      | NEITHER ADRENAL MEDULLA EXAMINED; NOT IN PLANE; RECUT EVALUATED        |                                         |                |                |                 |            |    |
| LIVER             | 9.31     | 3.156 | HEART          | MICRO:      | CARDIOMYOPATHY                                                         |                                         |                |                |                 |            |    |
| KIDNEYS           | 2.04     | 0.692 | LIVER          | MICRO:      | INFLAMMATION, SUBACUTE PAS STAIN, POSITIVE                             |                                         |                |                |                 |            |    |
| HEART             | 1.48     | 0.502 |                | MICRO:      | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT               |                                         |                |                |                 |            |    |
| SPLEEN            | 0.49     | 0.166 |                | MICRO:      | OIL RED O, NEGATIVE                                                    |                                         |                |                |                 |            |    |
| UTERUS/CX         | 0.76     | 0.258 |                | MICRO:      | MINERALIZATION, VASCULAR INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR |                                         |                |                |                 |            |    |
| OVARIES/OVIDUCTS  | 0.1033   | 0.035 | LUNGS          | MICRO:      | NEITHER ADRENAL MEDULLA EXAMINED; NOT IN PLANE; RECUT EXAMINED         |                                         |                |                |                 |            |    |
| THYMUS GLAND      | 0.2699   | 0.091 |                | MICRO:      | PARATHYROID                                                            |                                         |                |                |                 |            |    |
| ADRENAL GLANDS    | 0.0698   | 0.024 |                | MICRO:      | NOT EXAMINED                                                           |                                         |                |                |                 |            |    |
| THYROID/ PARA     | 0.0140   | 0.005 |                | MICRO:      | NEITHER ADRENAL MEDULLA EXAMINED; NOT IN PLANE; RECUT EXAMINED         |                                         |                |                |                 |            |    |
| FINAL BODY WT (G) | 295.     |       |                |             | SKELETAL MUSCLE                                                        |                                         |                |                |                 |            |    |
|                   |          |       |                |             | MICRO:                                                                 | NEITHER PARATHYROID IN PLANE OF SECTION |                |                |                 |            |    |
|                   |          |       |                |             | MICRO:                                                                 | INFLAMMATION, SUBACUTE                  |                |                |                 |            |    |
|                   |          |       |                |             | MICRO:                                                                 | ATROPHY                                 |                |                |                 |            |    |
|                   |          |       |                |             |                                                                        | NO SIGNIFICANT                          |                |                |                 |            |    |
|                   |          |       |                |             |                                                                        | CHANGES OBSERVED                        |                |                |                 |            |    |
|                   |          |       |                |             |                                                                        | GROSS:                                  | ADRENAL GLANDS | AORTA          | STERNEBRAE      | OVIDUCTS   |    |
|                   |          |       |                |             |                                                                        | BRAIN                                   | CECUM          | COLON          | DUODENUM        |            |    |
|                   |          |       |                |             |                                                                        | ESOPHAGUS                               | EYES/OPTIC N.  | HEART          | ILEUM           |            |    |
|                   |          |       |                |             |                                                                        | JEJUNUM                                 | KIDNEYS        | LIVER          | LYMPH NODE, MES |            |    |
|                   |          |       |                |             |                                                                        | LUNGS                                   | MAMMARY GLAND  | NERVE, SCIATIC | OVARIES         |            |    |
|                   |          |       |                |             |                                                                        | PANCREAS                                | RECTUM         | PITUITARY      | SAL. GLAND MAND |            |    |
|                   |          |       |                |             |                                                                        | SKELETAL MUSCLE                         | SKIN           | SPINAL CORD    | SPLEEN          |            |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90 DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 80

| ANIMAL NO. | 43501 | GROUP | 1: | 0 | MG/KG/DAY | FEMALE | SCHEDULED BUTH        | 07/28/00                      | DATE OF DEATH:  | 07/28/00 | STUDY DAY: | 93 | GRADE           |
|------------|-------|-------|----|---|-----------|--------|-----------------------|-------------------------------|-----------------|----------|------------|----|-----------------|
|            |       |       |    |   |           |        | STOMACH               | LYMPH NODE, MAND THYMUS GLAND |                 |          |            |    |                 |
|            |       |       |    |   |           |        | TRACHEA               | URINARY BLADDER               | UTERUS          |          |            |    | THYROID GLANDS  |
|            |       |       |    |   |           |        | CERVIX                | AORTA                         |                 |          |            |    | VAGINA          |
|            |       |       |    |   |           |        | MICRO: ADRENAL GLANDS | CECUM                         | STERNEBRAE      |          |            |    | OVIDUCTS        |
|            |       |       |    |   |           |        | BRAIN                 | EYES/OPTIC N.                 | COLON           |          |            |    | DUODENUM        |
|            |       |       |    |   |           |        | ESOPHAGUS             | LYMPH NODE, MES               | ILEUM           |          |            |    | JEJUNUM         |
|            |       |       |    |   |           |        | KIDNEYS               | STOMACH, GLD                  | ADRENAL CORTEX  |          |            |    | MAMMARY GLAND   |
|            |       |       |    |   |           |        | NERVE: SCITATIC       | PANCREAS                      | STOMACH, NONGLD |          |            |    | MARROW, STERN   |
|            |       |       |    |   |           |        | OVARIES               | SAL. GLAND                    | RECTUM          |          |            |    | PITUITARY       |
|            |       |       |    |   |           |        | LYMPH NODE,           | MAND SKIN                     | SPINAL CORD     |          |            |    | SPLEEN          |
|            |       |       |    |   |           |        | UTERUS                | MAND THYROID GLANDS           | TRACHEA         |          |            |    | URINARY BLADDER |
|            |       |       |    |   |           |        |                       | VAGINA                        | CERVIX          |          |            |    |                 |
|            |       |       |    |   |           |        | NOT EXAMINED          | MICRO: ADRENAL MEDULLA        | PARATHYROID     |          |            |    |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 81

| ANIMAL NO.        | 43420    | GROUP | 2 : 100 MG/KG/DAY | FEMALE                        | SCHEDULED EUTH   | 07/26/00       | DATE OF DEATH:  | 07/26/00        | STUDY DAY: 91   | GRADE      |
|-------------------|----------|-------|-------------------|-------------------------------|------------------|----------------|-----------------|-----------------|-----------------|------------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             | MICRO: INFLAMMATION, SUBACUTE |                  |                |                 |                 |                 | 1          |
| BRAIN             | 1.77     | 0.681 | NO SIGNIFICANT    |                               |                  |                |                 |                 |                 |            |
| LIVER             | 11.03    | 4.242 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS         | AORTA            | CECTUM         | STERNEBRAE      | COLON           | OVIDUCTS        | DUODENITUM |
| KIDNEYS           | 2.17     | 0.835 |                   | BRAIN                         | ESOPHAGUS        | EYES/OPTIC N.  | HEART           | ILEUM           | LYMPH NODE, MES |            |
| HEART             | 0.95     | 0.365 |                   | JEJUNUM                       | KIDNEYS          | LIVER          | LIVER           |                 | OVARIES         |            |
| SPLEEN            | 0.48     | 0.185 |                   | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | PITUITARY       | SAL. GLAND MAND |                 |            |
| UTERUS/CX         | 0.72     | 0.277 |                   | PANCREAS                      | RECTUM           | SPINAL CORD    | SPLEEN          |                 |                 |            |
| OVARIES/OVIDUCTS  | 0.1087   | 0.042 |                   | SKELLETAL MUSCLE              | SKIN             | STOMACH        | THYROID GLAND   |                 |                 |            |
| THYMUS GLAND      | 0.2884   | 0.111 |                   | STOMACH                       | LYMPH NODE, MAND | THYMUS GLAND   | URINARY BLADDER | UTERUS          | THYROID GLANDS  | VAGINA     |
| ADRENAL GLANDS    | 0.0744   | 0.029 |                   | TRACHEA                       | CERVIX           |                |                 |                 |                 |            |
| THYROIDS/ PARA    | 0.0152   | 0.006 |                   | MICRO:LUNGS                   |                  |                |                 |                 |                 |            |
| FINAL BODY WT (G) | 260.     |       |                   | THYROID GLANDS                |                  |                |                 |                 |                 |            |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 82

| ANIMAL NO.        | 43439    | GROUP | 2: 100 MG/KG/DAY | FEMALE                                                    | SCHEDULED EUTH | 07/28/00                        | DATE OF DEATH:        | 07/28/00              | STUDY DAY: 93  | GRADE           |
|-------------------|----------|-------|------------------|-----------------------------------------------------------|----------------|---------------------------------|-----------------------|-----------------------|----------------|-----------------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR |                |                                 |                       |                       |                | 1               |
| BRAIN             | 1.91     | 0.718 | LUNGS            | MICRO: INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR      |                |                                 |                       |                       |                | 1               |
| LIVER             | 8.83     | 3.320 | KIDNEYS          | MINERALIZATION, VASCULAR                                  |                |                                 |                       |                       |                | 1               |
| KIDNEYS           | 1.67     | 0.628 | HEART            | 0.83                                                      | 0.312          | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS | AORTA                 | STERNEBRAE     | OVIDUCTS        |
| HEART             | 0.83     | 0.42  | SPLEEN           | 0.46                                                      | 0.173          |                                 | BRAIN                 | CECUM                 | COLON          | DUODENUM        |
| SPLEEN            | 0.46     | 0.173 | UTERUS/CX        | 0.1366                                                    | 0.051          |                                 | ESOPHAGUS             | EYES/OPTIC N.         | HEART          | ILEUM           |
| OVARIES/OVIDUCTS  | 0.2537   | 0.095 | THYMUS GLAND     | 0.0599                                                    | 0.023          |                                 | KIDNEYS               | JEJUNUM               | LIVER          | LYMPH NODE, MES |
| ADRENAL GLANDS    | 0.0233   | 0.009 | ADRENAL GLANDS   | 0.0233                                                    | 0.009          |                                 | MAMMARY GLAND         | LUNGS                 | NERVE, SCIATIC | OVARIES         |
| THYROIDS/PARA     | 2.66     |       | THYROIDS/PARA    |                                                           |                |                                 | PANCREAS              | RECTUM                | PITUITARY      | SAL. GLAND MAND |
| FINAL BODY WT (G) |          |       |                  |                                                           |                |                                 | SKELETAL MUSCLE       | SKIN                  | SPINAL CORD    | SPLEEN          |
|                   |          |       |                  |                                                           |                |                                 | STOMACH               | LYMPH NODE, MAND      | THYMUS GLAND   | THYROID GLANDS  |
|                   |          |       |                  |                                                           |                |                                 | TRACHEA               | URINARY BLADDER       | UTERUS         | VAGINA          |
|                   |          |       |                  |                                                           |                |                                 | CERVIX                | MICRO: THYROID GLANDS |                |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 83

| ANIMAL NO.                          | 43458    | GROUP | 2: 100 MG/KG/DAY                   | FEMALE                                                       | SCHEDULED EUTH  | 07/27/00          | DATE OF DEATH: | 07/27/00 | STUDY DAY: 92 | GRADE |
|-------------------------------------|----------|-------|------------------------------------|--------------------------------------------------------------|-----------------|-------------------|----------------|----------|---------------|-------|
| ORGAN WEIGHT                        | ABS. (G) | REL.  | GENERAL COMMENT                    | GROSS: ORGAN DAMAGED AT NECROPSY                             |                 |                   |                |          |               | P     |
| BRAIN                               | 1.83     | 0.775 | BRAIN                              | BRAIN                                                        |                 |                   |                |          |               |       |
| LIVER                               | 8.33     | 3.530 | LIVER                              | MICRO: INFILTRATION, SUBACUTE<br>VACUOLATION, HEPATOCELLULAR |                 |                   |                |          |               | 1     |
| KIDNEYS                             | 1.72     | 0.729 |                                    |                                                              |                 |                   |                |          |               | 1     |
| HEART                               | 1.03     | 0.436 | THYROID GLANDS                     | MICRO: CYST, ULMIMOBANCHIAL                                  |                 |                   |                |          |               | 1     |
| SPLEEN                              | 0.40     | 0.169 | NO SIGNIFICANT<br>CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                        | AORTA           |                   |                |          |               |       |
| UTERUS/CX                           | 0.55     | 0.233 |                                    | BRAIN                                                        | CECUM           |                   |                |          |               |       |
| OVARIES/OVIDUCTS                    | 0.1351   | 0.057 |                                    | ESOPHAGUS                                                    | EYES/OPTIC N.   |                   |                |          |               |       |
| THYMUS GLAND                        | 0.2855   | 0.121 |                                    | JEJUNUM                                                      | KIDNEYS         |                   |                |          |               |       |
| ADRENAL GLANDS                      | 0.0642   | 0.027 |                                    | LUNGS                                                        | MAMMARY GLAND   | LIVER             |                |          |               |       |
| THYROIDS/ PARA<br>FINAL BODY WT (G) | 0.0163   | 0.007 | 236.                               | PANCREAS                                                     | RECTUM          | NERVE, SCIATIC    |                |          |               |       |
|                                     |          |       |                                    | SKELLETAL MUSCLE                                             | SKIN            | PITUITARY         |                |          |               |       |
|                                     |          |       |                                    | STOMACH                                                      | LYMPH NODE      | SPINAL CORD       |                |          |               |       |
|                                     |          |       |                                    | TRACHEA                                                      | URINARY BLADDER | MAND THYMUS GLAND |                |          |               |       |
|                                     |          |       |                                    | CERVIX                                                       |                 | UTERUS            |                |          |               |       |
|                                     |          |       |                                    | MICRO: LUNGS                                                 |                 | VAGINA            |                |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43462    | GROUP | 2: 100 MG/KG/DAY | FEMALE                          | SCHEDULED EUTH   | 07/26/00       | DATE OF DEATH:  | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|------------------|---------------------------------|------------------|----------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE   |                  |                |                 |          |               |       |
| BRAIN             | 1.75     | 0.768 | LUNGS            | MICRO: MINERALIZATION, VASCULAR |                  |                |                 |          |               |       |
| LIVER             | 8.05     | 3.531 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL    |                  |                |                 |          |               |       |
| KIDNEYS           | 1.71     | 0.750 | NO SIGNIFICANT   |                                 |                  |                |                 |          |               |       |
| HEART             | 0.89     | 0.390 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS           | AORTA            | STERNEBRAE     | OVIDUCTS        |          |               |       |
| SPLEEN            | 0.47     | 0.206 |                  | BRAIN                           | CECTUM           | COLON          | DUODENUM        |          |               |       |
| UTERUS/CX         | 0.44     | 0.193 |                  | ESOPHAGUS                       | EYES/OPTIC N.    | HEART          | ILEUM           |          |               |       |
| OVARIES/OVIDUCTS  | 0.1167   | 0.051 |                  | JEJUNUM                         | KIDNEYS          | LIVER          | LYMPH NODE, MES |          |               |       |
| THYMUS GLAND      | 0.3171   | 0.139 |                  | LUNGS                           | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |          |               |       |
| ADRENAL GLANDS    | 0.0562   | 0.025 |                  | PANCREAS                        | RECTUM           | PITUITARY      | SAL. GLAND MAND |          |               |       |
| THYROIDS/PARA     | 0.0173   | 0.008 |                  | SKELLETAL MUSCLE                | SKIN             | SPINAL CORD    | SPLEEN          |          |               |       |
| FINAL BODY WT (G) | 228.     |       |                  | STOMACH                         | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |          |               |       |
|                   |          |       |                  | TRACHEA                         | URINARY BLADDER  | UTERUS         | VAGINA          |          |               |       |
|                   |          |       |                  | CERVIX                          |                  |                |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA -BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43468    | GROUP | 2: 100 MG/KG/DAY | FEMALE                                                  | SCHEDULED EUTH   | 07/27/00      | DATE OF DEATH:  | 07/27/00 | STUDY DAY: 92 | GRADE |
|-------------------|----------|-------|------------------|---------------------------------------------------------|------------------|---------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE                           |                  |               |                 |          |               |       |
| BRAIN             | 1.90     | 0.646 |                  | VACUOLATION, HEPATOCELLULAR                             |                  |               |                 |          |               | 1     |
| LIVER             | 10.25    | 3.486 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL                            |                  |               |                 |          |               | 1     |
| KIDNEYS           | 2.22     | 0.755 |                  | ONE THYROID EXAMINED; OTHER NOT PRESENT; REUT EVALUATED |                  |               |                 |          |               | 1     |
| HEART             | 1.24     | 0.422 | NO SIGNIFICANT   | GROSS: ADRENAL GLANDS                                   | AORTA            | STERNEBRAE    | OVIDUCTS        |          |               |       |
| SPLEEN            | 0.56     | 0.190 | CHANGES OBSERVED | BRAIN                                                   | CETUM            | COLON         | DUODENUM        |          |               |       |
| UTERUS/CX         | 0.60     | 0.204 |                  | ESOPHAGUS                                               | EYES/OPTIC N.    | HEART         | ILEUM           |          |               |       |
| OVARIES/OVIDUCTS  | 0.0897   | 0.031 |                  | JEJUNUM                                                 | KIDNEYS          | LIVER         | LYMPH NODE, MES |          |               |       |
| THYMUS GLAND      | 0.3005   | 0.102 |                  | LUNGS                                                   | MAMMARY GLAND    | NERVE,SCIATIC | OVARIES         |          |               |       |
| ADRENAL GLANDS    | 0.0671   | 0.023 |                  | PANCREAS                                                | RECTUM           | PITUITARY     | SAL. GLAND MAND |          |               |       |
| THYROIDS/PARA     | 0.0290   | 0.010 |                  | SKELLETAL MUSCLE                                        | SKIN             | SPINAL CORD   | SPLEEN          |          |               |       |
| FINAL BODY WT (G) | 294.     |       |                  | STOMACH                                                 | LYMPH NODE, MAND | THYMUS GLAND  | THYROID GLANDS  |          |               |       |
|                   |          |       |                  | TRACHEA                                                 | URINARY BLADDER  | UTERUS        | VAGINA          |          |               |       |
|                   |          |       |                  | CERVIX                                                  |                  |               |                 |          |               |       |
|                   |          |       |                  | MICRO:LUNGS                                             |                  |               |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43489    | GROUP | 2: 100 MG/KG/DAY | FEMALE | SCHEDULED EUTH                | 07/27/00         | DATE OF DEATH: | 07/27/00        | STUDY DAY: 92 | GRADE |
|-------------------|----------|-------|------------------|--------|-------------------------------|------------------|----------------|-----------------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |        | MICRO: INFILTRATION, SUBACUTE |                  |                |                 |               |       |
| BRAIN             | 1.88     | 0.637 | THYROID GLANDS   |        | VACUOLATION, HEPATOCELLULAR   |                  |                |                 |               | 1     |
| LIVER             | 10.30    | 3.492 | NO SIGNIFICANT   |        | MICRO: CYST, ULTIMOBRANCHIAL  |                  |                |                 |               | 1     |
| KIDNEYS           | 2.15     | 0.729 | CHANGES OBSERVED |        |                               |                  |                |                 |               | 1     |
| HEART             | 1.20     | 0.407 |                  |        | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE     | OVIDUCTS        |               |       |
| SPLEEN            | 0.57     | 0.193 |                  |        | BRAIN                         | CECUM            | COLON          | DUODENUM        |               |       |
| UTERUS/CX         | 0.86     | 0.292 |                  |        | ESOPHAGUS                     | EYES/OPTIC N.    | HEART          | ILEUM           |               |       |
| OVARIES/OVIDUCTS  | 0.1483   | 0.050 |                  |        | JEJUNUM                       | KIDNEYS          | LIVER          | LYMPH NODE, MES |               |       |
| THYMUS GLAND      | 0.2228   | 0.076 |                  |        | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |               |       |
| ADRENAL GLANDS    | 0.0843   | 0.029 |                  |        | PANCREAS                      | RECTUM           | PITUITARY      | SAL. GLAND MAND |               |       |
| THYROIDS/PARA     | 0.0190   | 0.006 |                  |        | SKELETAL MUSCLE               | SKIN             | SPINAL CORD    | SPLEEN          |               |       |
| FINAL BODY WT (G) | 295.     |       |                  |        | STOMACH                       | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |               |       |
|                   |          |       |                  |        | TRACHEA                       | URINARY BLADDER  | UTERUS         | VAGINA          |               |       |
|                   |          |       |                  |        | CERVIX                        |                  |                |                 |               |       |
|                   |          |       |                  |        | MICRO: LUNGS                  |                  |                |                 |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43502    | GROUP | 2: 100 MG/KG/DAY                | FEMALE                                                    | SCHEDULED EUTH   | 07/28/00       | DATE OF DEATH:  | 07/28/00 | STUDY DAY: 93 | GRADE |
|-------------------|----------|-------|---------------------------------|-----------------------------------------------------------|------------------|----------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR |                  |                |                 |          |               | 1     |
| BRAIN             | 1.80     | 0.657 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                     | AORTA            | STERNERRAE     | OVIDUCTS        |          |               | 1     |
| LIVER             | 9.51     | 3.471 |                                 | BRAIN                                                     | CECUM            | COLON          | DUODENUM        |          |               |       |
| KIDNEYS           | 1.88     | 0.686 |                                 | ESOPHAGUS                                                 | EYES, OPTIC N.   | HEART          | ILEUM           |          |               |       |
| HEART             | 1.12     | 0.409 |                                 | JEJUNUM                                                   | KIDNEYS          | LIVER          | LYMPH NODE, MES |          |               |       |
| SPLEEN            | 0.49     | 0.179 |                                 | LUNGS                                                     | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |          |               |       |
| UTERUS/CX         | 0.51     | 0.186 |                                 | PANCREAS                                                  | RECTUM           | PITUITARY      | SAL. GLAND MAND |          |               |       |
| OVARIES/OVIDUCTS  | 0.1101   | 0.040 |                                 | SKELETAL MUSCLE                                           | SKIN             | SPINAL CORD    | SPLEEN          |          |               |       |
| THYMUS GLAND      | 0.2149   | 0.078 |                                 | STOMACH                                                   | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |          |               |       |
| ADRENAL GLANDS    | 0.0851   | 0.031 |                                 | TRACHEA                                                   | URINARY BLADDER  | UTERUS         | VAGINA          |          |               |       |
| THYROIDS/PARA     | 0.0258   | 0.009 |                                 | CERVIX                                                    | MICRO:LUNGS      | THYROID GLANDS |                 |          |               |       |
| FINAL BODY WT (G) | 274.     |       |                                 |                                                           |                  |                |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATE  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43511    | GROUP | 2: 100 MG/KG/DAY | FEMALE                                                                                  | SCHEDULED EUTH        | 07/28/00                                        | DATE OF DEATH:                                             | 07/28/00                                                               | STUDY DAY: | 93 | GRADE |
|-------------------|----------|-------|------------------|-----------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL:  | LIVER<br>LUNGS   | MICRO: INFLAMMATION, SUBACUTE<br>MICRO: INFLAMMATION, CHRONIC<br>HISTOCYTOSIS, ALVEOLAR | STERNEBRAE            | AORTA<br>CECUM<br>ESOPHAGUS<br>BRAIN<br>JEJUNUM | OVIDUCTS<br>DUODENUM<br>ILEUM<br>HEART<br>KIDNEYS<br>LIVER | LYMPH NODE,<br>OVARIES<br>SPLEEN                                       | MES        |    |       |
| BRAIN             | 1.85     | 0.609 | 3.312            | NO SIGNIFICANT<br>CHANGES OBSERVED                                                      | GROSS: ADRENAL GLANDS | EYES/OPTIC N.<br>RECTUM                         | MAMMARY GLAND<br>PANCREAS<br>SKIN                          | NERVE, SCIATIC<br>PITUITARY<br>SPINAL CORD                             |            |    |       |
| LIVER             | 10.07    | 3.727 |                  |                                                                                         | BRAIN                 | KIDNEY                                          | LUNGS                                                      | STOMACH<br>LYMPH NODE, MAND<br>URINARY BLADDER                         |            |    |       |
| KIDNEYS           | 2.21     | 0.727 |                  |                                                                                         | ESOPHAGUS             | RECTUM                                          | PANCREAS                                                   | THYMUS GLAND<br>ADRENAL GLANDS<br>THYROIDS / PARA<br>FINAL BODY WT (G) |            |    |       |
| HEART             | 1.07     | 0.352 |                  |                                                                                         | JEJUNUM               | SKIN                                            | STOMACH                                                    | THYROID GLANDS<br>Vagina                                               |            |    |       |
| SPLEEN            | 0.52     | 0.171 |                  |                                                                                         | RECTUM                | STOMACH                                         | TRACHEA                                                    | UTERUS                                                                 |            |    |       |
| UTERUS/OVIDUCTS   | 0.55     | 0.181 |                  |                                                                                         | SKIN                  | LYMPH NODE, MAND                                | TRACHEA                                                    |                                                                        |            |    |       |
| THYMUS GLAND      | 0.1760   | 0.058 |                  |                                                                                         | STOMACH               | THYMUS GLAND                                    |                                                            |                                                                        |            |    |       |
| ADRENAL GLANDS    | 0.3339   | 0.110 |                  |                                                                                         | TRACHEA               | URINARY BLADDER                                 |                                                            |                                                                        |            |    |       |
| THYROIDS / PARA   | 0.0765   | 0.025 |                  |                                                                                         |                       |                                                 |                                                            |                                                                        |            |    |       |
| FINAL BODY WT (G) | 0.0167   | 0.005 |                  |                                                                                         |                       |                                                 |                                                            |                                                                        |            |    |       |

GROSS GRADE CODE : 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE : 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43515    | GROUP | 2 : 100 MG/KG/DAY | FEMALE                                               | SCHEDULED EUTH        | 07/26/00         | DATE OF DEATH: | 07/26/00 | STUDY DAY: 91    | GRADE |
|-------------------|----------|-------|-------------------|------------------------------------------------------|-----------------------|------------------|----------------|----------|------------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LUNGS             | MICRO: INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR |                       |                  |                |          |                  |       |
| BRAIN             | 1.81     | 0.573 | 3.826             | NO SIGNIFICANT                                       |                       |                  |                |          |                  |       |
| LIVER             | 12.09    | 0.367 | 0.677             | CHANGES OBSERVED                                     | GROSS: ADRENAL GLANDS | AORTA            | STERNEBRAE     | COLON    | OVIDUCTS         | 1     |
| KIDNEYS           | 2.14     | 0.171 | 0.282             |                                                      | BRAIN                 | CECUM            |                |          | DUODENUM         | 2     |
| HEART             | 1.16     | 0.037 | 0.1161            |                                                      | ESOPHAGUS             | EYES/OPTIC N.    | HEART          |          | ILEUM            |       |
| SPLEEN            | 0.54     | 0.091 | 0.2867            |                                                      | JEJUNUM               | KIDNEYS          | LIVER          |          | LYMPH NODE, MESS |       |
| UTERUS/CX         | 0.89     | 0.024 | 0.0749            |                                                      | LUNGS                 | MAMMARY GLAND    | NERVE, SCIATIC |          | OVARIES          |       |
| OVARIES/OVIDUCTS  | 0.1161   | 0.005 | 0.0165            |                                                      | PANCREAS              | RECTUM           | PITUITARY      |          | SAL. GLAND MAND  |       |
| THYMUS GLAND      | 0.2867   | 0.091 | 0.0165            |                                                      | SKELETAL MUSCLE       | SKIN             | SPINAL CORD    |          | SPLEEN           |       |
| ADRENAL GLANDS    | 0.0749   |       |                   |                                                      | STOMACH               | LYMPH NODE, MAND | THYMUS GLAND   |          | THYROID GLANDS   |       |
| THYROIDS/PARA     | 0.0165   |       |                   |                                                      | TRACHEA               | URINARY BLADDER  | UTERUS         |          | VAGINA           |       |
| FINAL BODY WT (G) | 316.     |       |                   |                                                      | CERVIX                | MICRO: LIVER     | THYROID GLANDS |          |                  |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSOPIC FINDINGS

| ANIMAL NO.        | 43463    | GROUP | 3 : 300 MG/KG/DAY               | FEMALE                                                                                               | SCHEDULED EUTH                                                                                             | 07/26/00                                                                               | DATE OF DEATH:                                                                               | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|---------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           | MICRO: INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR PERIPORTAL TO MIDZONAL                     |                                                                                                            |                                                                                        |                                                                                              |          |               | 1     |
| BRAIN             | 1.69     | 0.687 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               | 2     |
| LIVER             | 8.85     | 3.598 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| KIDNEYS           | 1.77     | 0.720 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS BRAIN ESCOPHAGUS JEJUNUM LUNGS PANCREAS SKELETAL MUSCLE STOMACH TRACHEA CERVIX | AORTA CECUM EYES/OPTIC N. KIDNEYS MAMMARY GLAND RECTUM SKIN LYMPH NODE, MAND THYMUS URINARY BLADDER UTERUS | STERNEBRAE COLON HEART LIVER NERVE, SCIATIC PITUITARY SPINAL CORD THYROID GLAND VAGINA | OVIDUCTS DUODENUM ILEUM LYMPH NODE, MES OVARIES SAL. GLAND MAND SPLEEN THYROID GLANDS VAGINA |          |               |       |
| HEART             | 0.85     | 0.346 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| SPLEEN            | 0.47     | 0.191 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| UTERUS/CX         | 0.45     | 0.183 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| OVARIES/OVIDUCTS  | 0.1287   | 0.052 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| THYMUS GLAND      | 0.1072   | 0.044 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| ADRENAL GLANDS    | 0.0641   | 0.026 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| THYROIDS/PARA     | 0.0164   | 0.007 |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |
| FINAL BODY WT (G) | 246.     |       |                                 |                                                                                                      |                                                                                                            |                                                                                        |                                                                                              |          |               |       |

MICRO: LUNGS  
GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43478    | GROUP | 3:               | 300 MG/KG/DAY                   | FEMALE          | SCHEDULED EUTH | 07/27/00        | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92    |
|-------------------|----------|-------|------------------|---------------------------------|-----------------|----------------|-----------------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE   |                 |                |                 |                |          |            | GRADE |
| BRAIN             | 1.93     | 0.538 | LUNGS            | MICRO: MINERALIZATION, VASCULAR |                 |                |                 |                |          |            | 1     |
| LIVER             | 12.82    | 3.571 | NO SIGNIFICANT   |                                 |                 |                |                 |                |          |            | 1     |
| KIDNEYS           | 2.06     | 0.574 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS           | AORTA           | STERNEBRAE     |                 |                |          |            |       |
| HEART             | 1.16     | 0.323 |                  | BRAIN                           | CECTUM          | COLON          | OVIDUCTS        |                |          |            |       |
| SPLEEN            | 0.56     | 0.156 |                  | ESOPHAGUS                       | EYES/OPTIC N.   | HEART          | DUODENUM        |                |          |            |       |
| UTERUS/CX         | 0.60     | 0.167 |                  | JEJUNUM                         | KIDNEYS         | LIVER          | ILEUM           |                |          |            |       |
| OVARIES/OVIDUCTS  | 0.0935   | 0.026 |                  | LUNGS                           | MAMMARY GLAND   | NERVE, SCIATIC | LYMPH NODE, MES |                |          |            |       |
| THYMUS GLAND      | 0.3124   | 0.087 |                  | PANCREAS                        | RECTUM          | PITUITARY      | OVARIES         |                |          |            |       |
| ADRENAL GLANDS    | 0.0693   | 0.019 |                  | SKELLETAL MUSCLE                | SKIN            | SPINAL CORD    | SAL. GLAND MAND |                |          |            |       |
| THYROID/ PARA     | 0.0149   | 0.004 |                  | STOMACH                         | LYMPH NODE      | THYMUS GLAND   | SPLEEN          |                |          |            |       |
| FINAL BODY WT (G) | 359.     |       |                  | TRACHEA                         | URINARY BLADDER | UTERUS         | THYROID GLANDS  |                |          |            |       |
|                   |          |       |                  | CERVIX                          |                 | VAGINA         |                 |                |          |            |       |
|                   |          |       |                  | MICRO: THYROID GLANDS           |                 |                |                 |                |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43491    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                        | SCHEDULED EUTH   | 07/26/00       | DATE OF DEATH:  | 07/26/00 | STUDY DAY: 91 | GRADE |
|-------------------|----------|-------|-------------------|-------------------------------|------------------|----------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             | MICRO: INFILTRATION, SUBACUTE |                  |                |                 |          |               | 1     |
| BRAIN             | 1.73     | 0.562 | THYROID GLANDS    | MICRO: CYST, ULTIMOBRANCHIAL  |                  |                |                 |          |               | 1     |
| LIVER             | 9.52     | 3.091 |                   | HYPERTROPHY, FOLLICULAR CELL  |                  |                |                 |          |               | 1     |
| KIDNEYS           | 1.98     | 0.643 | NO SIGNIFICANT    |                               |                  |                |                 |          |               |       |
| HEART             | 1.05     | 0.341 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE     | OVIDUCTS        |          |               |       |
| SPLEEN            | 0.40     | 0.130 |                   | BRAIN                         | CECUM            | COLON          | DUODENUM        |          |               |       |
| UTERUS/CX         | 0.86     | 0.279 |                   | ESOPHAGUS                     | EYES OPTIC N.    | HEART          | ILEUM           |          |               |       |
| OVARIES/OVIDUCTS  | 0.1311   | 0.043 |                   | JEJUNUM                       | KIDNEYS          | LIVER          | LYMPH NODE, MES |          |               |       |
| THYMUS GLAND      | 0.2712   | 0.088 |                   | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |          |               |       |
| ADRENAL GLANDS    | 0.0840   | 0.027 |                   | PANCREAS                      | RECTUM           | PITUITARY      | SAL. GLAND MAND |          |               |       |
| THYROIDS/PARA     | 0.0178   | 0.006 |                   | SKELETAL MUSCLE               | SKIN             | SPINAL CORD    | SPLLEEN         |          |               |       |
| FINAL BODY WT (G) | 308.     |       |                   | STOMACH                       | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |          |               |       |
|                   |          |       |                   | TRACHEA                       | URINARY BLADDER  | UTERUS         | VAGINA          |          |               |       |
|                   |          |       |                   | CERVIX                        |                  |                |                 |          |               |       |
|                   |          |       |                   | MICRO:LUNGS                   |                  |                |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43495    | GROUP | 3 : 300 MG/KG/DAY               | FEMALE | SCHEDULED EUTH                                             | 07/28/00         | DATE OF DEATH: | 07/28/00 | STUDY DAY:      | 93 |
|-------------------|----------|-------|---------------------------------|--------|------------------------------------------------------------|------------------|----------------|----------|-----------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           |        | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR  |                  |                |          | GRADE           |    |
| BRAIN             | 1.96     | 0.718 |                                 |        | MICRO: INFILTRATION, HEPATOCELLULAR                        |                  |                |          |                 | 1  |
| LIVER             | 10.93    | 4.004 | LUNGS                           |        | MICRO: INFILTRATION, GRANULOMATOUS HISTIOCYTOSIS, ALVEOLAR |                  |                |          |                 | 1  |
| KIDNEYS           | 1.93     | 0.707 |                                 |        |                                                            |                  |                |          |                 | 1  |
| HEART             | 1.05     | 0.385 | THYROID GLANDS                  |        | MICRO: CYST, ULTIMOBRANCHIAL HYPERTROPHY, FOLLICULAR CELL  |                  |                |          |                 | 1  |
| SPLEEN            | 0.41     | 0.150 |                                 |        |                                                            |                  |                |          |                 | 1  |
| UTERUS/CX         | 0.68     | 0.249 | NO SIGNIFICANT CHANGES OBSERVED |        | GROSS: ADRENAL GLANDS                                      | AORTA            | STERNEBRAE     |          | OVIDUCTS        |    |
| OVARIES/OVDUCTS   | 0.1223   | 0.045 |                                 |        | BRAIN                                                      | CECUM            | COLON          |          | DUODENUM        |    |
| THYMUS GLAND      | 0.2317   | 0.085 |                                 |        | ESOPHAGUS                                                  | EYES/OPTIC N.    | HEART          |          | ILEUM           |    |
| ADRENAL GLANDS    | 0.0814   | 0.030 |                                 |        | JEJUNUM                                                    | KIDNEYS          | LIVER          |          | LYMPH NODE, MES |    |
| THYROIDS/ PARA    | 0.0181   | 0.007 |                                 |        | LUNGS                                                      | MAMMARY GLAND    | NERVE, SCIATIC |          | OVARIES         |    |
| FINAL BODY WT (G) | 273.     |       |                                 |        | PANCREAS                                                   | RECTUM           | PITUITARY      |          | SAL. GLAND MAND |    |
|                   |          |       |                                 |        | SKELETAL MUSCLE                                            | SKIN             | SPINAL CORD    |          | SPLEEN          |    |
|                   |          |       |                                 |        | STOMACH                                                    | LYMPH NODE, MAND | THYMUS GLAND   |          | THYROID GLANDS  |    |
|                   |          |       |                                 |        | TRACHEA                                                    | URINARY BLADDER  | UTERUS         |          | VAGINA          |    |
|                   |          |       |                                 |        | CERVIX                                                     |                  |                |          |                 |    |

GROSS GRADE CODE: 1 - SLIGHT, 2 - MODERATE, 3 - MARKED, P - PRESENT  
MICRO GRADE CODE: 1 - MINIMAL, 2 - MILD, 3 - MODERATE, 4 - SEVERE, P - PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 96

| ANIMAL NO.                      | 43496    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                                          | SCHEDULED EUTH    | 07/28/00       | DATE OF DEATH:   | 07/28/00 | STUDY DAY: | 93 | GRADE |
|---------------------------------|----------|-------|-------------------|-------------------------------------------------|-------------------|----------------|------------------|----------|------------|----|-------|
| ORGAN WEIGHT                    | ABS. (G) | REL.  | GENERAL COMMENT   | GROSS:                                          | MECHANICAL TRAUMA |                |                  |          |            | P  |       |
| BRAIN                           | 1.90     | 0.601 | HARDERIAN GLANDS  | DISTAL TAIL MISSING                             |                   |                |                  |          |            | P  |       |
| LIVER                           | 12.38    | 3.918 | HARDERIAN GLANDS  | DARK RED AREA (S)                               |                   |                |                  |          |            | P  |       |
| KIDNEYS                         | 2.53     | 0.801 | HARDERIAN GLANDS  | MULTIPLE, PINPOINT, BILATERAL                   |                   |                |                  |          |            |    |       |
| HEART                           | 1.28     | 0.405 | HARDERIAN GLANDS  | MICRO: PIGMENT                                  |                   |                |                  |          |            | 1  |       |
| SPLEEN                          | 0.82     | 0.259 | LIVER             | CORRELATES WITH GROSS RED AREA (S)              |                   |                |                  |          |            |    |       |
| UTERUS/CX                       | 0.83     | 0.263 | LIVER             | MICRO: VACUOLATION, HEPATOCELLULAR              |                   |                |                  |          |            | 1  |       |
| OVARIES/OVIDUCTS                | 0.1046   | 0.033 | LUNGS             | MICRO: INFLAMMATION, GRANULOMATOUS              |                   |                |                  |          |            | 1  |       |
| THYMUS GLAND                    | 0.2451   | 0.078 | OVARIES           | GROSS: WHITE AREA (S)                           |                   |                |                  |          |            | P  |       |
| ADRENAL GLANDS                  | 0.0877   | 0.028 |                   | MULTIPLE, PINPOINT, BILATERAL                   |                   |                |                  |          |            | P  |       |
| THYROID/FARAD                   | 0.0207   | 0.007 | OVARIES           | MICRO: ATROPHY                                  |                   |                |                  |          |            | 1  |       |
| FINAL BODY WT (G)               | 316.     |       |                   | NO HISTOLOGIC CORRELATE TO GROSS WHITE AREA (S) |                   |                |                  |          |            |    |       |
| SKIN                            |          |       |                   | GROSS: RED MATTING                              |                   |                |                  |          |            | P  |       |
| THYROID GLANDS                  |          |       |                   | NASAL                                           |                   |                |                  |          |            |    |       |
| UTERUS                          |          |       |                   | MICRO: CYST, ULTIMOBRANCHIAL                    |                   |                |                  |          |            | 1  |       |
|                                 |          |       |                   | MICRO: METAPLASIA, SQUAMOUS                     |                   |                |                  |          |            |    |       |
|                                 |          |       |                   | ON SLIDE WITH OVARIES                           |                   |                |                  |          |            |    |       |
| NO SIGNIFICANT CHANGES OBSERVED |          |       |                   |                                                 |                   |                |                  |          |            |    |       |
|                                 |          |       |                   | GROSS: ADRENAL GLANDS                           | AORTA             | STERNEBRAE     | OVIDUCTS         |          |            |    |       |
|                                 |          |       |                   | BRAIN                                           | CECUM             | COLON          | DUODENUM         |          |            |    |       |
|                                 |          |       |                   | ESOPHAGUS                                       | EYES/OPTIC N.     | HEART          | ILEUM            |          |            |    |       |
|                                 |          |       |                   | JEJUNUM                                         | KIDNEYS           | LIVER          | LYMPH NODE, MES  |          |            |    |       |
|                                 |          |       |                   | LUNGS                                           | MAMMARY GLAND     | NERVE, SCIATIC | PANCREAS         |          |            |    |       |
|                                 |          |       |                   | RECTUM                                          | PITUITARY         | STOMACH        | SKELLETAL MUSCLE |          |            |    |       |
|                                 |          |       |                   | SPINAL CORD                                     | SPLEEN            | TRACHEA        | LYMPH NODE, MAND |          |            |    |       |
|                                 |          |       |                   | THYMUS GLAND                                    | THYROID GLANDS    | Vagina         | URINARY BLADDER  |          |            |    |       |
|                                 |          |       |                   | UTERUS                                          |                   |                |                  |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43508    | GROUP | 3 : 300 MG/KG/DAY               | FEMALE | SCHEDULED EUTH.                                                                 | 07/27/00         | DATE OF DEATH: | 07/27/00        | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|---------------------------------|--------|---------------------------------------------------------------------------------|------------------|----------------|-----------------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           |        | MICRO: INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR PERIORTAL TO MIDZONAL |                  |                |                 | 1          |    |       |
| BRAIN             | 1.88     | 0.681 |                                 |        |                                                                                 |                  |                |                 |            | 3  |       |
| LIVER             | 10.48    | 3.797 |                                 |        |                                                                                 |                  |                |                 |            |    |       |
| KIDNEYS           | 2.04     | 0.739 | NO SIGNIFICANT CHANGES OBSERVED |        | GROSS: ADRENAL GLANDS                                                           | AORTA            | STERNEBRAE     |                 |            |    |       |
| HEART             | 1.02     | 0.370 |                                 |        | BRAIN                                                                           | CECUM            | COLON          | OVIDUCTS        |            |    |       |
| SPLIEN            | 0.59     | 0.214 |                                 |        | ESOPHAGUS                                                                       | EYES/OPTIC N.    | HEART          | DUODENUM        |            |    |       |
| UTERUS/CX         | 0.57     | 0.207 |                                 |        | JEJUNUM                                                                         | KIDNEYS          | LIVER          | ILEUM           |            |    |       |
| OVARIES/OVIDUCTS  | 0.1644   | 0.060 |                                 |        | LUNGS                                                                           | MAMMARY GLAND    | NERVE, SCIATIC | LYMPH NODE, MES |            |    |       |
| THYMUS GLAND      | 0.2768   | 0.100 |                                 |        | PANCREAS                                                                        | RECTUM           | PITUITARY      | OVARIES         |            |    |       |
| ADRENAL GLANDS    | 0.0826   | 0.030 |                                 |        | SKELETAL MUSCLE                                                                 | SKIN             | SPINAL CORD    | SAL. GLAND MAND |            |    |       |
| THYROID/ PARA     | 0.1231   | 0.008 |                                 |        | STOMACH                                                                         | LYMPH NODE, MAND | THYMUS GLAND   | SPLEEN          |            |    |       |
| FINAL BODY WT (G) | 276.     |       |                                 |        | TRACHEA                                                                         | URINARY BLADDER  | UTERUS         | THYROID GLANDS  |            |    |       |
|                   |          |       |                                 |        | CERVIX                                                                          |                  |                | VAGINA          |            |    |       |
|                   |          |       |                                 |        | MICRO: LUNGS                                                                    |                  |                |                 |            |    |       |
|                   |          |       |                                 |        | THYROID GLANDS                                                                  |                  |                |                 |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43513    | GROUP | 3 : 300 MG/KG/DAY                  | FEMALE | SCHEDULED EUTH        | 07/27/00                                              | DATE OF DEATH:          | 07/27/00                   | STUDY DAY: | 92 |
|-------------------|----------|-------|------------------------------------|--------|-----------------------|-------------------------------------------------------|-------------------------|----------------------------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                              |        | MICRO:                | INFLAMMATION, SUBACUTE<br>VACUOLATION, HEPATOCELLULAR |                         |                            | GRADE      |    |
| BRAIN             | 1.96     | 0.653 |                                    |        |                       |                                                       |                         |                            |            | 1  |
| LIVER             | 9.96     | 3.320 | NO SIGNIFICANT<br>CHANGES OBSERVED |        | GROSS: ADRENAL GLANDS | AORTA<br>CECUM                                        | STERNEBRAE<br>COLON     | OVIDUCTS<br>DUODENUM       |            | 1  |
| KIDNEYS           | 2.05     | 0.683 |                                    |        | BRAIN                 | EYES/OPTIC N.                                         | HEART                   |                            |            |    |
| HEART             | 1.21     | 0.403 |                                    |        | ESOPHAGUS             | KIDNEYS                                               | LIVER                   | ILEUM                      |            |    |
| SPLEEN            | 0.72     | 0.240 |                                    |        | JEJUNUM               | MAMMARY GLAND                                         | NERVE, SCIATIC<br>NERVE | LYMPH NODE, MES<br>OVARIES |            |    |
| UTERUS/CX         | 0.58     | 0.193 |                                    |        | LUNGS                 | RECTUM                                                | PITUITARY               | SAL. GLAND MAND            |            |    |
| OVARIES/OVIDUCTS  | 0.1929   | 0.064 |                                    |        | PANCREAS              | SKIN                                                  | SPINAL CORD             | SPLEEN                     |            |    |
| THYMUS GLAND      | 0.4368   | 0.146 |                                    |        | SKELETAL MUSCLE       | LYMPH NODE, MAND                                      | THYMUS GLAND            | THYROID GLANDS             |            |    |
| ADRENAL GLANDS    | 0.0781   | 0.026 |                                    |        | STOMACH               | URINARY BLADDER                                       | UTERUS                  | VAGINA                     |            |    |
| THYROIDS/ PARA    | 0.0201   | 0.007 |                                    |        | TRACHEA               | CERVIX                                                | MICRO: LUNGS            | THYROID GLANDS             |            |    |
| FINAL BODY WT (G) | 300.     |       |                                    |        |                       |                                                       |                         |                            |            |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43516    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                                                         | SCHEDULED EUTH | 07/28/00         | DATE OF DEATH:                      | 07/28/00         | STUDY DAY:      | 93              | GRADE |
|-------------------|----------|-------|-------------------|----------------------------------------------------------------|----------------|------------------|-------------------------------------|------------------|-----------------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS           | GROSS: WHITE AREA(S)<br>ONE, 3 MM IN DIAMETER, IN CORTEX, LEFT |                |                  |                                     |                  | P               |                 |       |
| BRAIN             | 1.77     | 0.582 | KIDNEYS           | MICRO: INFLAMMATION, SUBACUTE                                  |                |                  |                                     |                  |                 |                 |       |
| LIVER             | 12.11    | 3.984 | KIDNEYS           | CORRELATES WITH GROSS WHITE AREA (S)                           |                |                  |                                     |                  |                 |                 |       |
| KIDNEYS           | 2.46     | 0.809 | HEART             | MICRO: INFLAMMATION, SUBACUTE                                  |                |                  |                                     |                  |                 |                 |       |
|                   |          |       | SPLEEN            | MICRO: INFLAMMATION, CHRONIC                                   |                |                  |                                     |                  |                 |                 |       |
|                   |          |       | UTERUS/CX         | 0.47                                                           | 0.155          | LIVERS           | HISTIOCYTOSIS, ALVEOLAR             |                  |                 |                 |       |
|                   |          |       | OVARIES/OVIDUCTS  | 0.86                                                           | 0.283          | LUNGS            |                                     |                  |                 |                 |       |
|                   |          |       | THYMUS GLAND      | 0.3539                                                         | 0.116          | NO SIGNIFICANT   | MICRO: HYPERTrophy, FOLLICULAR CELL |                  |                 |                 |       |
|                   |          |       | ADRENAL GLANDS    | 0.0818                                                         | 0.027          | CHANGES OBSERVED | GROSS: ADRENAL GLANDS               | AORTA            | STERNEBRAE      | OVIDUCTS        |       |
|                   |          |       | THYROIDS/ PARA    | 0.0176                                                         | 0.006          |                  | BRAIN                               | CECUM            | COLON           | DUODENUM        |       |
| FINAL BODY WT (G) | 304.     |       |                   |                                                                |                |                  | ESOPHAGUS                           | EYES/OPTIC N.    | HEART           | ILEUM           |       |
|                   |          |       |                   |                                                                |                |                  | JEJUNUM                             | LIVER            | LYMPH NODE, MES | LUNGS           |       |
|                   |          |       |                   |                                                                |                |                  | MAMMARY GLAND                       | NERVE, SCATIATIC | OVARIES         | PANCREAS        |       |
|                   |          |       |                   |                                                                |                |                  | RECTUM                              | PITUITARY        | SAL. GLAND MAND | SKELETAL MUSCLE |       |
|                   |          |       |                   |                                                                |                |                  | SKIN                                | SPINAL CORD      | SPLLEN          | STOMACH         |       |
|                   |          |       |                   |                                                                |                |                  | LYMPH NODE, MAND                    | THYROID GLANDS   | TRACHEA         |                 |       |
|                   |          |       |                   |                                                                |                |                  | URINARY BLADDER                     | UTERUS           | VAGINA          | CERVIX          |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 100

| ANIMAL NO.        | 43517    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                             | SCHEDULED EUTH        | 07/27/00       | DATE OF DEATH:  | 07/27/00 | STUDY DAY: 92 | GRADE |
|-------------------|----------|-------|-------------------|------------------------------------|-----------------------|----------------|-----------------|----------|---------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             | MICRO: INFLAMMATION, SUBACUTE      |                       |                |                 |          |               | 1     |
| BRAIN             | 1.90     | 0.688 | LUNGS             | MICRO: HISTIOCYTOSIS, ALVEOLAR     |                       |                |                 |          |               | 1     |
| LIVER             | 9.36     | 3.391 | THYROID GLANDS    | MICRO: HYPERTRPHY, FOLLICULAR CELL |                       |                |                 |          |               | 1     |
| KIDNEYS           | 1.99     | 0.721 | EAR (S)           | GROSS: SWOLLEN                     |                       |                |                 |          |               | P     |
| HEART             | 1.04     | 0.377 | EAR (S)           | MICRO: CHONDROPATHY, AURICULAR     | RIGHT                 |                |                 |          |               | 2     |
| SPLEEN            | 0.62     | 0.225 |                   | NO SIGNIFICANT                     | CORRELATES WITH GROSS | SWOLLEN        | APPEARANCE      |          |               |       |
| UTERUS/CX         | 0.64     | 0.232 |                   |                                    |                       |                |                 |          |               |       |
| OVARIES/OVIDUCTS  | 0.1228   | 0.044 |                   |                                    |                       |                |                 |          |               |       |
| THYMUS GLAND      | 0.2483   | 0.090 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS              | AORTA                 | STERNEBRAE     | OVIDUCTS        |          |               |       |
| ADRENAL GLANDS    | 0.0694   | 0.025 |                   | BRAIN                              | CECUM                 | COLON          | DUODENUM        |          |               |       |
| THYROIDS/ PARA    | 0.0171   | 0.006 |                   | ESOPHAGUS                          | EYES/OPTIC N.         | HEART          | ILEUM           |          |               |       |
| FINAL BODY WT (G) | 276.     |       |                   | JETJUNUM                           | KIDNEYS               | LIVER          | LYMPH NODE, MES |          |               |       |
|                   |          |       |                   | LUNGS                              | MAMMARY GLAND         | NERVE, SCIATIC | OVARIES         |          |               |       |
|                   |          |       |                   | PANCREAS                           | RECTUM                | PITUITARY      | SAL. GLAND MAND |          |               |       |
|                   |          |       |                   | SKELLETAL MUSCLE                   | SKIN                  | SPINAL CORD    | SPLEEN          |          |               |       |
|                   |          |       |                   | STOMACH                            | LYMPH NODE, MAND      | THYMUS GLAND   | THYROID GLANDS  |          |               |       |
|                   |          |       |                   | TRACHEA                            | URINARY BLADDER       | UTERUS         | VAGINA          |          |               |       |
|                   |          |       |                   | CERVIX                             |                       |                |                 |          |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 101

| ANIMAL NO.        | 43440    | GROUP | 4: 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH                                            | 07/27/00                                        | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 |
|-------------------|----------|-------|-------------------|--------|-----------------------------------------------------------|-------------------------------------------------|----------------|----------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | ESOPHAGUS         |        | MICRO:                                                    | DEGENERATION                                    |                |          | GRADE      |    |
| BRAIN             | 1.77     | 0.660 |                   |        |                                                           | FOCAL IN MUSCLE WALL                            |                |          | 2          |    |
| LIVER             | 11.81    | 4.407 | KIDNEYS           |        | GROSS:                                                    | DEPRESSED AREA (S)                              |                |          | P          |    |
| KIDNEYS           | 1.97     | 0.735 |                   |        | FEW, PINPOINT, IN CORTEX, LEFT                            |                                                 |                |          |            |    |
| HEART             | 0.96     | 0.358 | KIDNEYS           |        | MICRO:                                                    | INFLAMMATION, SUBACUTE                          |                |          | 1          |    |
| SPLEEN            | 0.37     | 0.138 |                   |        |                                                           | FOCAL; CORRELATES WITH GROSS DEPRESSED AREA (S) |                |          |            |    |
| UTERUS/CX         | 0.41     | 0.153 | LIVER             |        | MICRO:                                                    | INFLAMMATION, SUBACUTE                          |                |          | 1          |    |
| OVARIES/OVIDUCTS  | 0.1382   | 0.052 |                   |        | VACUOLATION, HEPATOCELLULAR                               |                                                 |                |          |            |    |
| THYMUS GLAND      | 0.2648   | 0.099 |                   |        | PERIPORTAL TO MIDZONAL                                    |                                                 |                |          | 2          |    |
| ADRENAL GLANDS    | 0.0722   | 0.027 |                   |        | HYPERTROPHY, HEPATOCELLULAR, CENTRILOBULAR                |                                                 |                |          |            |    |
| THYROIDS/PARA     | 0.0217   | 0.008 |                   |        | PAS STAIN, NEGATIVE                                       |                                                 |                |          |            |    |
| FINAL BODY WT (G) | 2.68.    |       |                   |        | PERIPORTAL TO MIDZONAL                                    |                                                 |                |          |            |    |
|                   |          |       |                   |        | OIL RED O, POSITIVE                                       |                                                 |                |          |            |    |
| LUNGS             |          |       |                   |        | PERIPORTAL TO MID-ZONAL; VACUOLES ARE OIL RED O POSITIVE  |                                                 |                |          |            |    |
|                   |          |       |                   |        | GROSS: DARK RED AREA (S)                                  |                                                 |                |          |            |    |
| LUNGS             |          |       |                   |        | SEVERAL, IRREGULARLY SHAPED, ALL LOBES                    |                                                 |                |          |            |    |
|                   |          |       |                   |        | GROSS: WHITE AREA (S)                                     |                                                 |                |          |            |    |
| LUNGS             |          |       |                   |        | SEVERAL, IRREGULARLY SHAPED, ALL LOBES                    |                                                 |                |          |            |    |
|                   |          |       |                   |        | MICRO: INFLAMMATION, CHRONIC                              |                                                 |                |          |            |    |
|                   |          |       |                   |        | NO CORRELATE TO GROSS RED DISCOLORATION                   |                                                 |                |          |            |    |
|                   |          |       |                   |        | HISTIOCYTOSIS, ALVEOLAR                                   |                                                 |                |          |            |    |
|                   |          |       |                   |        | CORRELATES WITH GROSS WHITE AREAS                         |                                                 |                |          |            |    |
|                   |          |       |                   |        | INFILTRATION, GRANULOMATOUS                               |                                                 |                |          |            |    |
|                   |          |       |                   |        | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |                                                 |                |          |            |    |

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 102

| ANIMAL NO.                                       | 43440                 | GROUP                 | 4:              | 1000 MG/KG/DAY | FEMALE                       | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH:  | 07/27/00        | STUDY DAY:       | 92            | GRADE |
|--------------------------------------------------|-----------------------|-----------------------|-----------------|----------------|------------------------------|----------------|----------|-----------------|-----------------|------------------|---------------|-------|
| AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES |                       |                       |                 |                |                              |                |          |                 |                 |                  |               |       |
| SPLEEN                                           | MICRO: PIGMENT, BROWN | THYMUS GLAND          | MICRO: ATROPHY  | THYROID GLANDS | MICRO: CYST, ULTIMOBRANCHIAL |                |          | AORTA           | STERNEBRAE      | OVIDUCTS         |               | 1     |
| NO SIGNIFICANT CHANGES OBSERVED                  |                       | GROSS: ADRENAL GLANDS | BRAIN           | CECUM          | EYES/OPTIC N.                | LIVER          |          | COLON           | DUODENUM        | TILEUM           | MAMMARY GLAND | 1     |
|                                                  |                       | ESOPHAGUS             | ESOPHAGUS       |                |                              |                |          | HEART           | LYMPH NODE, MES |                  |               | 1     |
|                                                  |                       | JEJUNUM               |                 |                |                              |                |          | PANCREAS        | RECTUM          |                  |               |       |
|                                                  |                       | NERVE SCIATIC         |                 |                |                              |                |          | SKELETAL MUSCLE | SKIN            |                  |               |       |
|                                                  |                       | PITUITARY             |                 |                |                              |                |          | SPLEN           | STOMACH         | LYMPH NODE, MAND |               |       |
|                                                  |                       | SPINAL CORD           |                 |                |                              |                |          | THYROID GLANDS  | TRACHEA         | URINARY BLADDER  |               |       |
|                                                  |                       | THYMUS GLAND          |                 |                |                              |                |          | VAGINA          | CERVIX          |                  |               |       |
|                                                  |                       | UTERUS                |                 |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | MICRO: AORTA          | STERNEBRAE      |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | CECUM                 | CECUM           |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | HEART                 | HEART           |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | ADRENAL CORTEX        |                 |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | STOMACH, GLD          | MAMMARY GLAND   |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | PANCREAS              | STOMACH, NONGLD |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | SAL. GLAND MAND       | PARATHYROID     |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | LYMPH NODE, MAND      | SKELETAL MUSCLE |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       | VAGINA                | TRACHEA         |                |                              |                |          |                 |                 |                  |               |       |
|                                                  |                       |                       | CERVIX          |                |                              |                |          |                 |                 |                  |               |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.           | 43456    | GROUP | 4:      | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: | 07/28/00                                                  | STUDY DAY: | 93 | GRADE |
|----------------------|----------|-------|---------|----------------|--------|----------------|----------|----------------|-----------------------------------------------------------|------------|----|-------|
| ORGAN WEIGHT         | ABS. (G) | REL.  |         |                |        |                |          | MICRO:         | CARDIOMYOPATHY                                            |            |    |       |
| BRAIN                | 1.78     | 0.481 | HEART   |                |        |                |          | MICRO:         | INFILTRATION, SUBACUTE                                    | 1          |    |       |
| LIVER                | 15.03    | 4.062 | KIDNEYS |                |        |                |          | MICRO:         | MINERALIZATION, PELVIC                                    | 1          |    |       |
| KIDNEYS              | 2.25     | 0.608 | LIVER   |                |        |                |          | MICRO:         | HYPERTROPHY, HEPATOCELLULAR, CENTRILOBULAR                | 1          |    |       |
| HEART                | 1.32     | 0.357 |         |                |        |                |          |                | INFILTRATION, SUBACUTE                                    | 2          |    |       |
| SPLEEN               | 0.65     | 0.176 |         |                |        |                |          |                | VACUOLATION, HEPATOCELLULAR                               | 1          |    |       |
| UTERUS/CX            | 0.55     | 0.149 |         |                |        |                |          |                | PAS STAIN, POSITIVE                                       | 1          |    |       |
| OVARIES/OVIDUCTS     | 0.1301   | 0.035 |         |                |        |                |          |                | MOSTLY CENTRILOBULAR; STAIN LOST WITH DIASTASE TREATMENT  | 1          |    |       |
| THYMUS GLAND         | 0.2686   | 0.073 |         |                |        |                |          |                | OIL RED O, POSITIVE                                       | 2          |    |       |
| ADRENAL GLANDS       | 0.0794   | 0.021 |         |                |        |                |          |                | PERIORTAL TO MID-ZONAL; VACUOLES ARE OIL RED O POSITIVE   | 2          |    |       |
| THYROIDS/PARA        | 0.0199   | 0.005 | LUNGS   |                |        |                |          |                |                                                           |            | 2  |       |
| FINAL BODY WT (G)    | 370.     |       |         |                |        |                |          |                |                                                           |            |    |       |
| PANCREAS             |          |       |         |                |        |                |          |                | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS |            |    |       |
| SKELETAL MUSCLE      |          |       |         |                |        |                |          |                | AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES          |            |    |       |
| SPLEEN               |          |       |         |                |        |                |          |                |                                                           | 1          |    |       |
| LYMPH NODE, MAND     |          |       |         |                |        |                |          |                | MICRO: INFILTRATION, SUBACUTE                             | 1          |    |       |
| THYMUS GLAND         |          |       |         |                |        |                |          |                | MICRO: DEGENERATION                                       | 1          |    |       |
| THYROID GLANDS       |          |       |         |                |        |                |          |                | MICRO: HEMATOPOEISIS, EXTRAMEDULLARY                      | 1          |    |       |
| VAGINA               |          |       |         |                |        |                |          |                | MICRO: HYPERPLASIA, LYMPHOID                              | 1          |    |       |
| CERVIX               |          |       |         |                |        |                |          |                | MICRO: HEMORRHAGE                                         | 1          |    |       |
| NO SIGNIFICANT       |          |       |         |                |        |                |          |                |                                                           | 1          |    |       |
| CHANGES OBSERVED     |          |       |         |                |        |                |          |                |                                                           |            | 1  |       |
| GROSS:ADRENAL GLANDS |          |       |         |                |        |                |          |                |                                                           |            |    |       |
| BRAIN                |          |       |         |                |        |                |          |                | AORTA                                                     |            |    |       |
| ESOPHAGUS            |          |       |         |                |        |                |          |                | CECUM                                                     |            |    |       |
|                      |          |       |         |                |        |                |          |                | EYES/OPTIC N.                                             |            |    |       |
|                      |          |       |         |                |        |                |          |                | STERNEBRAE                                                |            |    |       |
|                      |          |       |         |                |        |                |          |                | COLON                                                     |            |    |       |
|                      |          |       |         |                |        |                |          |                | HEART                                                     |            |    |       |
|                      |          |       |         |                |        |                |          |                | OVIDUCTS                                                  |            |    |       |
|                      |          |       |         |                |        |                |          |                | DUODENUM                                                  |            |    |       |
|                      |          |       |         |                |        |                |          |                | ILEUM                                                     |            |    |       |

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.       | 43456 | GROUP            | 4: | 1000 MG/KG/DAY  | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH:  | 07/28/00 | STUDY DAY: | 93 | GRADE |
|------------------|-------|------------------|----|-----------------|--------|----------------|----------|-----------------|----------|------------|----|-------|
| JEJUNUM          |       | KIDNEYS          |    | LIVER           |        |                |          | LYMPH NODE, MES |          |            |    |       |
| LUNGS            |       | MAMMARY GLAND    |    | NERVE, SCIATIC  |        |                |          | OVARIES         |          |            |    |       |
| PANCREAS         |       | RECTUM           |    | PITUITARY       |        |                |          | SAL. GLAND MAND |          |            |    |       |
| SKELLETAL MUSCLE |       | SKIN             |    | SPINAL CORD     |        |                |          | SPLEEN          |          |            |    |       |
| STOMACH          |       | LYMPH NODE, MAND |    | THYMUS GLAND    |        |                |          | THYROID GLANDS  |          |            |    |       |
| TRACHEA          |       | URINARY BLADDER  |    | UTERUS          |        |                |          | VAGINA          |          |            |    |       |
| CERVIX           |       | STERNEBRAE       |    | OVIDUCTS        |        |                |          | BRAIN           |          |            |    |       |
| MICRO:AORTA      |       | CECUM            |    | DUODENUM        |        |                |          | ESOPHAGUS       |          |            |    |       |
| CECUM            |       | EYES/OPTIC N.    |    | JEJUNUM         |        |                |          | LYMPH NODE, MES |          |            |    |       |
| EYES/OPTIC N.    |       | ADRENAL CORTEX   |    | MAMMARY GLAND   |        |                |          | NERVE, SCIATIC  |          |            |    |       |
| ADRENAL CORTEX   |       | STOMACH, GLD     |    | STOMACH, NONGLD |        |                |          | OVARIES         |          |            |    |       |
| STOMACH, GLD     |       | PARATHYROID      |    | RECTUM          |        |                |          | SAL. GLAND MAND |          |            |    |       |
| PARATHYROID      |       | SKIN             |    | SPINAL CORD     |        |                |          | URINARY BLADDER |          |            |    |       |
| SKIN             |       | UTERUS           |    | TRACHEA         |        |                |          |                 |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43460    | GROUP | 4:               | 1000 MG/KG/DAY | FEMALE                | SCHEDULED EUTH                                                                                                                             | 07/27/00       | DATE OF DEATH:  | 07/27/00 | STUDY DAY: | 92 | GRADE |
|-------------------|----------|-------|------------------|----------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |                | MICRO:                | INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR PERIPORTAL, HEPATOCELLULAR, CENTRILOBULAR                                               |                |                 |          | 1          | 1  |       |
| BRAIN             | 1.91     | 0.816 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| LIVER             | 9.86     | 4.214 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| KIDNEYS           | 1.73     | 0.739 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| HEART             | 1.02     | 0.436 | LUNGS            |                | MICRO:                | HYPERTROPHY, HEPATOCELLULAR, CENTRILOBULAR INFLAMMATION, CHRONIC GRANULOMATOUS                                                             |                |                 |          | 2          | 1  |       |
| SPLEEN            | 0.48     | 0.205 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| UTERUS/CX         | 0.56     | 0.239 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| OVARIES/OVIDUCTS  | 0.1442   | 0.062 |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| THYMUS GLAND      | 0.1375   | 0.059 | PARATHYROID      |                | MICRO:                | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES NO SIGNIFICANT CHANGES OBSERVED |                |                 |          |            |    |       |
| ADRENAL GLANDS    | 0.0833   | 0.036 | LYMPH NODE, MAND |                | MICRO:                | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION                                                                                    |                |                 |          |            |    |       |
| THYROIDS/PARA     | 0.0166   | 0.007 | THYMUS GLAND     |                | MICRO:                | HYPERTHYROID, HYPERPLASIA, LYMPHOID                                                                                                        |                |                 |          |            |    |       |
| FINAL BODY WT (G) | 234.     |       | THYROID GLANDS   |                | MICRO:                | CYST, UTRIMOBRANCHIAL HYPERTROPHY, FOLLICULAR CELL COLLOID                                                                                 |                |                 |          |            |    |       |
|                   |          |       |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
| TRACHEA           |          |       |                  |                | MICRO:                | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED DILATATION, GLANDULAR                                                             |                |                 |          |            |    |       |
| VAGINA            |          |       |                  |                | MICRO:                | COLLOID                                                                                                                                    |                |                 |          |            |    |       |
| NO SIGNIFICANT    |          |       |                  |                | NO SIGNIFICANT        | INFLAMMATION, SUBACUTE                                                                                                                     |                |                 |          |            |    |       |
| CHANGES OBSERVED  |          |       |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
|                   |          |       |                  |                |                       |                                                                                                                                            |                |                 |          |            |    |       |
|                   |          |       |                  |                | GROSS: ADRENAL GLANDS | AORTA                                                                                                                                      | STERNEBRAE     | OVIDUCTS        |          |            |    |       |
|                   |          |       |                  |                | BRAIN                 | CECUM                                                                                                                                      | COLON          | DUODENUM        |          |            |    |       |
|                   |          |       |                  |                | ESOPHAGUS             | EYES/OPTIC N.                                                                                                                              | HEART          | ILEUM           |          |            |    |       |
|                   |          |       |                  |                | JEJUNUM               | KIDNEYS                                                                                                                                    | LIVER          | LYMPH NODE, MES |          |            |    |       |
|                   |          |       |                  |                | LUNGS                 | MAMMARY GLAND                                                                                                                              | NERVE, SCIATIC | OVARIES,        |          |            |    |       |
|                   |          |       |                  |                | PANCREAS              | RECTUM                                                                                                                                     | PITUITARY      | SAL. GLAND MAND |          |            |    |       |
|                   |          |       |                  |                | SKELLETAL MUSCLE      | SKIN                                                                                                                                       | SPINAL CORD    | SPLEEN          |          |            |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.      | 43460 | GROUP | 4: | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH  | 07/27/00        | DATE OF DEATH: | 07/27/00 | STUDY DAY:      | 92      | GRADE |
|-----------------|-------|-------|----|----------------|--------|-----------------|-----------------|----------------|----------|-----------------|---------|-------|
| STOMACH         |       |       |    |                |        | LYMPH NODE,     | MAND            | THYMUS         | GLAND    |                 |         |       |
| TRACHEA         |       |       |    |                |        | URINARY BLADDER | UTERUS          |                |          |                 |         |       |
| CERVIX          |       |       |    |                |        | OVIDUCTS        |                 |                |          | THYROID         | GGLANDS |       |
| MICRO AORTA     |       |       |    |                |        | STERNEBRAE      | DUODENUM        |                | VAGINA   |                 |         |       |
| CECUM           |       |       |    |                |        | COLON           |                 |                |          | BRAIN           |         |       |
| EYES/OPTIC N.   |       |       |    |                |        | HEART           | ILEUM           |                |          | ESOPHAGUS       |         |       |
| KIDNEYS         |       |       |    |                |        | LYMPH NODE,     | MES             |                |          | JEJUNUM         |         |       |
| ADRENAL MEDULLA |       |       |    |                |        | NERVE, SCIATIC  | ADRENAL CORTEX  |                |          | MAMMARY GLAND   |         |       |
| MARROW, STERN   |       |       |    |                |        | OVARIES         | STOMACH, GLD    |                |          | STOMACH, NONGLD |         |       |
| RECTUM          |       |       |    |                |        | PITUITARY       | PANCREAS        |                |          | PARATHYROID     |         |       |
| SKIN            |       |       |    |                |        | SPINAL CORD     | SAL. GLAND MAND |                |          | SKELETAL MUSCLE |         |       |
| UTERUS          |       |       |    |                |        | CERVIX          | SPLIEEN         |                |          | URINARY BLADDER |         |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT

MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43466    | GROUP | 4:               | 1000 MG/KG/DAY                                       | FEMALE                          | SCHEDULED EUTH | 07/26/00        | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 |
|-------------------|----------|-------|------------------|------------------------------------------------------|---------------------------------|----------------|-----------------|----------------|----------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | EYES/OPTIC N.    | MICRO:                                               | NO SIGNIFICANT CHANGES OBSERVED |                |                 |                |          | GRADE      |    |
| BRAIN             | 1.82     | 0.547 | KIDNEYS          | MICRO: ONE OPTIC NERVE EXAMINED; OTHER NOT IN PLANE; | RE-CUT                          | EVALUATED      |                 |                |          |            |    |
| LIVER             | 14.43    | 4.333 | LIVER            | MICRO: MINERALIZATION, PELVIC                        |                                 |                |                 |                |          | 1          |    |
| KIDNEYS           | 2.35     | 0.706 |                  | MICRO: INFILTRATION, SUBACUTE                        |                                 |                |                 |                |          | 2          |    |
| HEART             | 1.21     | 0.363 |                  | VACUOLATION, HEPATOCELLULAR                          |                                 |                |                 |                |          | 3          |    |
| SPLEEN            | 0.57     | 0.171 | LUNGS            | MICRO: PERIPORTAL TO MIDLZONAL                       |                                 |                |                 |                |          |            |    |
| UTERUS/CX         | 0.51     | 0.153 |                  | INFILTRATION, CHRONIC                                |                                 |                |                 |                |          | 1          |    |
| OVARIES/OVIDUCTS  | 0.1650   | 0.050 |                  | HISTIOCYTOSIS, ALVEOLAR                              |                                 |                |                 |                |          | 1          |    |
| THYMUS GLAND      | 0.2219   | 0.067 | MAMMARY GLAND    | MICRO: HYPERPLASIA, LOBULAR                          |                                 |                |                 |                |          | 1          |    |
| ADRENAL GLANDS    | 0.0652   | 0.020 | THYMUS GLAND     | MICRO: ATROPHY                                       |                                 |                |                 |                |          | 1          |    |
| THYROIDS/PARA     | 0.0246   | 0.007 | THYROID GLANDS   | MICRO: HYPERTrophy, FOLLICULAR CELL                  |                                 |                |                 |                |          | 2          |    |
| FINAL BODY WT (G) | 3.33     | .     | NO SIGNIFICANT   | GROSS: ADRENAL GLANDS                                | AORTA                           | STERNEBRAE     |                 |                |          |            |    |
|                   |          |       | CHANGES OBSERVED | BRAIN                                                | CECUM                           | COLON          | OVIDUCTS        |                |          |            |    |
|                   |          |       |                  | ESOPHAGUS                                            | EYES/OPTIC N.                   | HEART          | DUODENUM        |                |          |            |    |
|                   |          |       |                  | JEJUNUM                                              | KIDNEYS                         | LIVER          | ILEUM           |                |          |            |    |
|                   |          |       |                  | LUNGS                                                | MAMMARY GLAND                   | NERVE, SCIATIC | LYMPH NODE, MES |                |          |            |    |
|                   |          |       |                  | PANCREAS                                             | RECTUM                          | PITUITARY      | OVARIES         |                |          |            |    |
|                   |          |       |                  | SKELETAL MUSCLE                                      | SKIN                            | SPINAL CORD    | SAL. GLAND MAND |                |          |            |    |
|                   |          |       |                  | STOMACH                                              | LYMPH NODE, MAND                | THYMUS GLAND   | SPLEEN          |                |          |            |    |
|                   |          |       |                  | TRACHEA                                              | URINARY BLADDER                 | UTERUS         | THYROID GLANDS  |                |          |            |    |
|                   |          |       |                  | CERVIX                                               | STERNEBRAE                      |                | Vagina          |                |          |            |    |
|                   |          |       |                  | MICRO: AORTA                                         | OVIDUCTS                        |                |                 |                |          |            |    |
|                   |          |       |                  | CECUM                                                | DUODENUM                        |                |                 |                |          |            |    |
|                   |          |       |                  | EYES/OPTIC N.                                        | ILEUM                           |                |                 |                |          |            |    |
|                   |          |       |                  | LYMPH NODE, MES                                      | ADRENAL CORTEX                  |                |                 |                |          |            |    |
|                   |          |       |                  | STOMACH, GLD                                         | STOMACH, NONGLD                 |                |                 |                |          |            |    |
|                   |          |       |                  | PANCREAS                                             | PARATHYROID                     | RECTUM         |                 |                |          |            |    |
|                   |          |       |                  | SAL. GLAND MAND                                      | SKELETAL MUSCLE                 | SKIN           |                 |                |          |            |    |
|                   |          |       |                  | SPLEEN                                               | LYMPH NODE, MAND                | TRACHEA        | SPINAL CORD     |                |          |            |    |
|                   |          |       |                  |                                                      |                                 |                | URINARY BLADDER |                |          |            |    |

PROJECT NO.: WII-196012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43466      | GROUP       | 4:          | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91 | GRADE |
|-------------------|------------|-------------|-------------|----------------|--------|----------------|----------|----------------|----------|------------|----|-------|
| UTERUS            |            |             |             |                |        |                |          |                |          |            |    |       |
| VAGINA            |            |             |             |                |        |                |          |                |          |            |    |       |
| GROSS GRADE CODE: | 1-SLIGHT,  | 2-MODERATE, | 3-MARKED,   | P-PRESENT      |        |                |          |                |          |            |    |       |
| MICRO GRADE CODE: | 1-MINIMAL, | 2-MILD,     | 3-MODERATE, | 4-SEVERE,      |        |                |          |                |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43477    | GROUP | 4:               | 1000 MG/KG/DAY                                                   | FEMALE                               | SCHEDULED EUTH | 07/28/00   | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 | GRADE |
|-------------------|----------|-------|------------------|------------------------------------------------------------------|--------------------------------------|----------------|------------|----------------|----------|------------|----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS          | GROSS: DEPRESSED AREA(S)                                         |                                      |                |            |                |          |            |    | P     |
| BRAIN             | 1.87     | 0.693 |                  | ONE, LESS THAN 1 MM IN DIAMETER, IN CORTEX, LEFT                 |                                      |                |            |                |          |            |    |       |
| LIVER             | 11.83    | 4.381 | KIDNEYS          | MICRO: INFILTRATION, SUBACUTE                                    |                                      |                |            |                |          |            |    | 1     |
| KIDNEYS           | 2.13     | 0.789 |                  | GROSS: DEPRESSED AREAS HAVE HISTOLOGICALLY NORMAL TISSUE         |                                      |                |            |                |          |            |    |       |
| HEART             | 1.01     | 0.374 |                  | MICRO: MINERALIZATION, PELVIC                                    |                                      |                |            |                |          |            |    | 1     |
| SPLEEN            | 0.78     | 0.289 | LIVER            | HYPERTROPHY, HEPATOCELLULAR, CENTRILOBULAR                       |                                      |                |            |                |          |            |    | 1     |
| UTERUS/CX         | 0.77     | 0.285 |                  | INFILTRATION, SUBACUTE                                           |                                      |                |            |                |          |            |    | 2     |
| OVARIES/OVIDUCTS  | 0.1224   | 0.045 |                  | VACUOLATION, HEPATOCELLULAR                                      |                                      |                |            |                |          |            |    | 1     |
| THYMUS GLAND      | 0.2561   | 0.095 |                  | PERIORTAL TO MIZZONAL                                            |                                      |                |            |                |          |            |    | 2     |
| ADRENAL GLANDS    | 0.0686   | 0.025 | LUNGS            | MICRO: HISTIOCYTOSIS, ALVEOLAR                                   |                                      |                |            |                |          |            |    | 1     |
| THYROIDS/PARA     | 0.0157   | 0.006 | PARATHYROID      | MINERALIZATION, VASCULAR                                         |                                      |                |            |                |          |            |    | 1     |
| FINAL BODY WT (G) | 270.     |       |                  | MICRO: NO SIGNIFICANT CHANGES OBSERVED                           |                                      |                |            |                |          |            |    | 1     |
| SKIN              |          |       | SKIN             | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION          |                                      |                |            |                |          |            |    |       |
|                   |          |       | SKIN             | MASS: 30 X 20 X 8 MM, RED, SCABED, LEFT DORSAL FORELIMB, MASS #1 |                                      |                |            |                |          |            |    | P     |
|                   |          |       | SPLEEN           | MICRO: INFILTRATION, CHRONIC ACTIVE                              |                                      |                |            |                |          |            |    | 3     |
|                   |          |       | THYMUS GLAND     | FOCAL IN DEEP DERMIS & SUBCUTIS; CORRELATES WITH MASS #1         |                                      |                |            |                |          |            |    |       |
|                   |          |       | THYROID GLAND    | MICRO: HEMATOPOIESIS, EXTRAMEDULLARY                             |                                      |                |            |                |          |            |    | 1     |
|                   |          |       |                  | MICRO: HEMORRHAGE                                                |                                      |                |            |                |          |            |    | 1     |
|                   |          |       |                  | ATROPHY                                                          |                                      |                |            |                |          |            |    |       |
|                   |          |       |                  | THYROID GLANDS                                                   | MICRO: HYPERTHROPHY, FOLLICULAR CELL |                |            |                |          |            |    |       |
|                   |          |       |                  | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED         |                                      |                |            |                |          |            |    |       |
|                   |          |       |                  | COLLOID                                                          |                                      |                |            |                |          |            |    |       |
|                   |          |       | NO SIGNIFICANT   | NO SIGNIFICANT                                                   | GROSS: ADRENAL GLANDS                | AORTA          |            |                |          |            |    |       |
|                   |          |       | CHANGES OBSERVED |                                                                  | BRAIN                                | CECUM          |            |                |          |            |    |       |
|                   |          |       |                  |                                                                  |                                      |                | STERNEBRAE |                |          |            |    |       |
|                   |          |       |                  |                                                                  |                                      |                | COLON      |                |          |            |    |       |
|                   |          |       |                  |                                                                  |                                      |                | OVIBDUCTS  |                |          |            |    |       |
|                   |          |       |                  |                                                                  |                                      |                | DUODENUM   |                |          |            |    |       |

PROJECT NO.: WTL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 110

ANIMAL NO. 43477 GROUP 4: 1000 MG/KG/DAY FEMALE SCHEDULED EUTH 07/28/00 DATE OF DEATH: 07/28/00 STUDY DAY: 93 GRADE

|                  |                |                 |                  |
|------------------|----------------|-----------------|------------------|
| ESOPHAGUS        | EYES/OPTIC N.  | HEART           | ILEUM            |
| JEJUNUM          | LIVER          | LYMPH NODE, MES | LUNGS            |
| MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         | PANCREAS         |
| RECTUM           | PITUITARY      | SAL. GLAND      | MAND             |
| SPINAL CORD      | SPLEEN         | STOMACH         | SKELETAL MUSCLE  |
| THYMUS GLAND     | THYROID GLANDS | TRACHEA         | LYMPH NODE, MAND |
| UTERUS           | Vagina         | CERVIX          | URINARY BLADDER  |
| MICRO-AORTA      | STERNEBRAE     | OVIDUCTS        | BRAIN            |
| CECUM            | COLON          | DUODENUM        | ESOPHAGUS        |
| EYES/OPTIC N.    | HEART          | ILEUM           | JEJUNUM          |
| LYMPH NODE, MES  | ADRENAL CORTEX | MAMMARY GLAND   | ADRENAL MEDULLA  |
| NERVE, SCIATIC   | STOMACH, GLD   | STOMACH, NONGLD | MARROW, STERN    |
| OVARIES          | PANCREAS       | PARATHYROID     | RECTUM           |
| PITUITARY        | SAL. GLAND     | SKELETAL MUSCLE | SPINAL CORD      |
| LYMPH NODE, MAND | STOMACH        | URINARY BLADDER | UTERUS           |
| Vagina           | CERVIX         |                 |                  |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.            | 43479    | GROUP | 4 : 1000 MG/KG/DAY | FEMALE                                                    | SCHEDULED EUTH | 07/27/00 | DATE OF DEATH: | 07/27/00 | STUDY DAY: | 92 |
|-----------------------|----------|-------|--------------------|-----------------------------------------------------------|----------------|----------|----------------|----------|------------|----|
| ORGAN WEIGHT          | Abs. (g) |       |                    |                                                           |                |          |                |          | GRADE      |    |
| BRAIN                 | 1.86     | REL.  | KIDNEYS            | MICRO: BASOPHILIC TUBULES                                 |                |          |                |          | 1          |    |
| LIVER                 | 12.84    | 0.679 | LIVER              | MICRO: INFLAMMATION, SUBACUTE                             |                |          |                |          | 1          |    |
| KIDNEYS               | 2.27     | 4.686 | LUNGS              | MICRO: MINERALIZATION, VASCULAR                           |                |          |                |          | 1          |    |
| HEART                 | 0.96     | 0.828 |                    | HISTIOCYTOSIS, ALVEOLAR                                   |                |          |                |          | 1          |    |
| SPLEEN                | 0.43     | 0.350 |                    | AGGREGATES PRESENT                                        |                |          |                |          |            |    |
| UTERUS/CX             | 0.43     | 0.157 |                    | INFILTRATION, GRANULOMATOUS                               |                |          |                |          |            |    |
| OVARIES/OVIDUCTS      | 0.87     | 0.318 |                    | MULTIPLE LAYERS OF HISTIOTYTES RIMMING BRONCHIOLAR LUMENS |                |          |                |          |            |    |
| THYMUS GLAND          | 0.1817   | 0.066 |                    | AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES          |                |          |                |          |            |    |
| ADRENAL GLANDS        | 0.2173   | 0.079 |                    | MICRO: NO SIGNIFICANT CHANGES OBSERVED                    |                |          |                |          |            |    |
| THYROIDS/PARA         | 0.0617   | 0.023 | PARATHYROID        | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION   |                |          |                |          |            |    |
| FINAL BODY WT (G)     | 0.0127   | 0.005 | SPLEEN             | MICRO: PIGMENT, BROWN                                     |                |          |                |          |            |    |
|                       | 274.     |       |                    | GOLDEN-BROWN; DIFFUSE                                     |                |          |                |          |            |    |
| Lymph Node, Mand      |          |       |                    | MICRO: HYPERPLASIA, LYMPHOID                              |                |          |                |          |            |    |
| Thymus Gland          |          |       |                    | MICRO: ATROPHY                                            |                |          |                |          |            |    |
| Thyroid Glands        |          |       |                    | MICRO: HYPERTrophy, FOLLICULAR CELL                       |                |          |                |          |            |    |
| Uterus                |          |       |                    | MICRO: DILATATION, LUMEN                                  |                |          |                |          |            |    |
| NO SIGNIFICANT        |          |       |                    |                                                           |                |          |                |          |            |    |
| CHANGES OBSERVED      |          |       |                    |                                                           |                |          |                |          |            |    |
| GROSS: ADRENAL GLANDS |          |       |                    | AORTA                                                     |                |          |                |          |            |    |
| BRAIN                 |          |       |                    | CECUM                                                     |                |          |                |          |            |    |
| ESOPHAGUS             |          |       |                    | EYES/OPTIC N.                                             |                |          |                |          |            |    |
| JEJONUM               |          |       |                    | KIDNEYS                                                   |                |          |                |          |            |    |
| LUNGS                 |          |       |                    | MAMMARY GLAND                                             |                |          |                |          |            |    |
| PANCREAS              |          |       |                    | RECTUM                                                    |                |          |                |          |            |    |
| SKELETAL MUSCLE       |          |       |                    | NERVE, SCIATIC                                            |                |          |                |          |            |    |
| STOMACH               |          |       |                    | PITUITARY                                                 |                |          |                |          |            |    |
| TRACHEA               |          |       |                    | SKIN                                                      |                |          |                |          |            |    |
| CERVIX                |          |       |                    | SPINAL CORD                                               |                |          |                |          |            |    |
|                       |          |       |                    | LYMPH NODE, MAND                                          |                |          |                |          |            |    |
|                       |          |       |                    | THYMUS GLAND                                              |                |          |                |          |            |    |
|                       |          |       |                    | URINARY BLADDER                                           |                |          |                |          |            |    |
|                       |          |       |                    | VAGINA                                                    |                |          |                |          |            |    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

ANIMAL NO. 43479 GROUP 4: 1000 MG/KG/DAY FEMALE SCHEDULED EUTH 07/27/00 DATE OF DEATH: 07/27/00 STUDY DAY: 92 GRADE

| MICRO:AORTA     | STERNEBRAE      | OVIDUCTS        | BRAIN           |
|-----------------|-----------------|-----------------|-----------------|
| CECUM           | COLON           | DUODENUM        | ESOPHAGUS       |
| EYES/OPTIC N.   | HEART           | ILEUM           | JEJUNUM         |
| LYMPH NODE, MES | ADRENAL CORTEX  | MAMMARY GLAND   | ADRENAL MEDULLA |
| NERVE, SCIATIC  | STOMACH, GLD    | STOMACH, NONGLD | MARROW, SPERN   |
| OVARIES         | PANCREAS        | PARATHYROID     | RECTUM          |
| PTUITARY        | SAL. GLAND MAND | SKELETAL MUSCLE | SKIN            |
| SPINAL CORD     | TRACHEA         | URINARY BLADDER | VAGINA          |
| CERVIX          |                 |                 |                 |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSOPIC FINDINGS

| ANIMAL NO.            | 43481    | GROUP | 4 : 1000 MG/KG/DAY | FEMALE                                   | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH:            | 07/26/00                      | STUDY DAY:      | 91 | GRADE |
|-----------------------|----------|-------|--------------------|------------------------------------------|----------------|----------|---------------------------|-------------------------------|-----------------|----|-------|
| ORGAN WEIGHT          | ABS. (G) | REL.  | EYES/OPTIC N.      | MICRO: NO SIGNIFICANT CHANGES OBSERVED   |                |          | ONE OPTIC NERVE EXAMINED; | OTHER NOT IN PLANE;           | RECUT EVALUATED |    |       |
| BRAIN                 | 1.92     | 0.561 | HEART              | MICRO: CARDIOMYOPATHY                    |                |          |                           |                               |                 |    | 2     |
| LIVER                 | 13.92    | 4.070 | KIDNEYS            | MICRO: MINERALIZATION, PAPILLARY TUBULAR |                |          |                           |                               |                 |    | 1     |
| KIDNEYS               | 2.29     | 0.670 | HEART              | MICRO: INFILTRATION, SUBACUTE            |                |          |                           |                               |                 |    | 1     |
| HEART                 | 1.19     | 0.348 | LIVER              | MICRO: VACUOLATION, HEPATOCELLULAR       |                |          |                           |                               |                 |    | 1     |
| SPLIEN                | 0.47     | 0.137 | UTERUS/CX          | MICRO: MINERALIZATION, VASCULAR          |                |          |                           |                               |                 |    | 1     |
| UTERUS/CX             | 0.79     | 0.231 | LUNGS              | MICRO: INFILTRATION, CHRONIC             |                |          |                           |                               |                 |    | 1     |
| OVARIES/OVIDUCTS      | 0.1469   | 0.043 | THYMUS GLAND       | MICRO: HISTIOCYTOSIS, ALVEOLAR           |                |          |                           |                               |                 |    | 1     |
| THYMUS GLAND          | 0.2510   | 0.073 | ADRENAL GLANDS     | MICRO: HYPERPLASIA, LOBULAR              |                |          |                           |                               |                 |    | 1     |
| ADRENAL GLANDS        | 0.0655   | 0.019 | THYROIDS/PARA      | MICRO: NO SIGNIFICANT CHANGES OBSERVED   |                |          |                           |                               |                 |    | 2     |
| THYROIDS/PARA         | 0.0198   | 0.006 | FINAL BODY WT (G)  | 342.                                     |                |          | ONE PARATHYROID EXAMINED; | OTHER NOT IN PLANE OF SECTION |                 |    |       |
| THYROID GLAND         |          |       | LYMPH NODE, MAND   | MICRO: HYPERPLASIA, LYMPHOID             |                |          |                           |                               |                 |    | 1     |
| THYMOUS GLAND         |          |       | THYMOUS GLAND      | MICRO: HEMORRHAGE                        |                |          |                           |                               |                 |    | 1     |
| THYROID GLANDS        |          |       | UTERUS             | MICRO: ATROPHY                           |                |          |                           |                               |                 |    | 1     |
| UTERUS                |          |       | NO SIGNIFICANT     | MICRO: HYPERTrophy, FOLLICULAR CELL,     |                |          |                           |                               |                 |    | 2     |
| NO SIGNIFICANT        |          |       | CHANGES OBSERVED   | MICRO: DILATATION, LUMEN                 |                |          |                           |                               |                 |    | 1     |
| GROSS: ADRENAL GLANDS |          |       | AORTA              |                                          |                |          |                           |                               |                 |    |       |
| BRAIN                 |          |       | CECUM              | STERNEBRAE                               |                |          |                           |                               |                 |    |       |
| ESOPHAGUS             |          |       | EYES/OPTIC N.      | COLON                                    |                |          |                           |                               |                 |    |       |
| JEJUNUM               |          |       | KIDNEYS            | DUODENUM                                 |                |          |                           |                               |                 |    |       |
| LUNGS                 |          |       | MAMMARY GLAND      | ILEUM                                    |                |          |                           |                               |                 |    |       |
| PANCREAS              |          |       | RECTUM             | LYMPH NODE, MES                          |                |          |                           |                               |                 |    |       |
| SKELETAL MUSCLE       |          |       | NERVE, SCIATIC     | OVARIES                                  |                |          |                           |                               |                 |    |       |
| STOMACH               |          |       | PITUITARY          | SAL. GLAND MAND                          |                |          |                           |                               |                 |    |       |
| TRACHEA               |          |       | SKIN               | SPLEEN                                   |                |          |                           |                               |                 |    |       |
| CERVIX                |          |       | LYMPH NODE, MAND   | THYROID GLANDS                           |                |          |                           |                               |                 |    |       |
| MICRO:AOTIA           |          |       | URINARY BLADDER    | UTERUS                                   |                |          |                           |                               |                 |    |       |
| CECUM                 |          |       | STERNEBRAE         | VAGINA                                   |                |          |                           |                               |                 |    |       |
| CECUM                 |          |       | COLON              |                                          |                |          |                           |                               |                 |    |       |
| ESOPHAGUS             |          |       | OVIDUCTS           |                                          |                |          |                           |                               |                 |    |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.      | 43481           | GROUP          | 4: 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/26/00 | DATE OF DEATH:  | 07/26/00 | STUDY DAY: | 91 | GRADE |
|-----------------|-----------------|----------------|-------------------|--------|----------------|----------|-----------------|----------|------------|----|-------|
| EYES/OPTIC N.   | ILEUM           | JEJUNUM        |                   |        |                |          | LYMPH NODE, MES |          |            |    |       |
| ADRENAL CORTEX  | ADRENAL MEDULLA | NERVE, SCIATIC |                   |        |                |          | STOMACH, GLD    |          |            |    |       |
| STOMACH, NONGLD | MARROW, STERN   | OVARIES        |                   |        |                |          | PANCREAS        |          |            |    |       |
| PARATHYROID     | RECTUM          | PITUITARY      |                   |        |                |          | SAL. GLAND MAND |          |            |    |       |
| SKELETAL MUSCLE | SKIN            | SPINAL CORD    |                   |        |                |          | SPLEEN          |          |            |    |       |
| TRACHEA         | URINARY BLADDER | VAGINA         |                   |        |                |          | CERVIX          |          |            |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PAGE 115

| ANIMAL NO.        | 43484    | GROUP | 4: 1000 MG/KG/DAY              | FEMALE                                                                                                     | SCHEDULED EUTH  | 07/26/00 | DATE OF DEATH: | 07/26/00 | STUDY DAY: | 91      |
|-------------------|----------|-------|--------------------------------|------------------------------------------------------------------------------------------------------------|-----------------|----------|----------------|----------|------------|---------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS                        | GROSS: WHITE AREA(S) SEVERAL, PINPOINT TO 1 MM IN DIAMETER, IN CORTEX AND MEDULLA, RIGHT                   |                 |          |                |          |            | GRADE P |
| BRAIN             | 1.90     | 0.664 |                                |                                                                                                            |                 |          |                |          |            |         |
| LIVER             | 11.38    | 3.979 | KIDNEYS                        | MICRO: MINERALIZATION, PELVIC                                                                              |                 |          |                |          |            | 1       |
| KIDNEYS           | 1.85     | 0.647 |                                | NO HISTOLOGIC CORRELATE TO GROSS WHITE AREA (S)                                                            |                 |          |                |          |            |         |
| HEART             | 1.06     | 0.371 | LIVER                          | MICRO: INFILTRATION, SUBACUTE                                                                              |                 |          |                |          |            | 2       |
| SPLEEN            | 0.52     | 0.182 |                                | VACUOLATION, HEPATOCELLULAR                                                                                |                 |          |                |          |            | 1       |
| UTERUS/CX         | 0.43     | 0.150 |                                | PERIPORTAL TO MIDZONAL                                                                                     |                 |          |                |          |            |         |
| OVARIES/OVIDUCTS  | 0.1290   | 0.045 |                                | PAS STAIN, NEGATIVE                                                                                        |                 |          |                |          |            |         |
| THYMUS GLAND      | 0.1611   | 0.056 |                                | OIL RED O, POSITIVE                                                                                        |                 |          |                |          |            | 2       |
| ADRENAL GLANDS    | 0.0451   | 0.016 |                                | PERIPORTAL TO MID-ZONAL; VACUOLES ARE OIL RED O POSITIVE                                                   |                 |          |                |          |            | 3       |
| THYROID/PARA      | 0.0196   | 0.007 | LUNGS                          | MICRO: INFILTRATION, GRANULOMATOUS                                                                         |                 |          |                |          |            |         |
| FINAL BODY WT (G) | 286.     |       |                                | MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES |                 |          |                |          |            | 1       |
|                   |          |       |                                | INFLAMMATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR AGGREGATES PRESENT                                           |                 |          |                |          |            |         |
| THYMUS GLAND      |          |       | MICRO: ATROPHY                 |                                                                                                            |                 |          |                |          |            | 2       |
| THYROID GLANDS    |          |       | MICRO: CYST, ULMIMOBANCHIAL    |                                                                                                            |                 |          |                |          |            | 1       |
| TRACHEA           |          |       | MICRO: INFLAMMATION, GLANDULAR |                                                                                                            |                 |          |                |          |            | 1       |
| VAGINA            |          |       | MICRO: DILATATION, GLANDULAR   |                                                                                                            |                 |          |                |          |            | 1       |
| NO SIGNIFICANT    |          |       | MICRO: INFILTRATION, SUBACUTE  |                                                                                                            |                 |          |                |          |            | 1       |
| CHANGES OBSERVED  |          |       |                                |                                                                                                            |                 |          |                |          |            |         |
|                   |          |       | GROSS: ADRENAL GLANDS          | AORTA                                                                                                      | STERNEBRAE      |          |                |          |            |         |
|                   |          |       | BRAIN                          | CECUM                                                                                                      | COLON           | OVIDUCTS |                |          |            |         |
|                   |          |       | ESOPHAGUS                      | EYES/OPTIC N.                                                                                              | HEART           | DUODENUM |                |          |            |         |
|                   |          |       | JEJUNUM                        | LIVER                                                                                                      | LYMPH NODE, MES | ILEUM    |                |          |            |         |
|                   |          |       |                                |                                                                                                            |                 | LUNGS    |                |          |            |         |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.       | 43484 | GROUP | 4: | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH. | 07/26/00         | DATE OF DEATH: | 07/26/00 | STUDY DAY:      | 91 | GRADE |
|------------------|-------|-------|----|----------------|--------|-----------------|------------------|----------------|----------|-----------------|----|-------|
| MAMMARY GLAND    |       |       |    |                |        | NERVE, SCIATIC  | OVARIES          |                |          | PANCREAS        |    |       |
| RECTUM           |       |       |    |                |        | PITUITARY       | SAL. GLAND       |                |          | SKELETAL MUSCLE |    |       |
| SKIN             |       |       |    |                |        | SPINAL CORD     | SPLEEN           |                |          | STOMACH         |    |       |
| LYMPH NODE, MAND |       |       |    |                |        | THYMUS GLAND    | THYROID GLANDS   |                |          | TRACHEA         |    |       |
| URINARY BLADDER  |       |       |    |                |        | UTERUS          | VAGINA           |                |          | CERVIX          |    |       |
| MICRO:AORTA      |       |       |    |                |        | STERNEBRAE      | OVIDUCTS         |                |          | BRAIN           |    |       |
| CECUM            |       |       |    |                |        | COLON           | DUODENUM         |                |          | ESOPHAGUS       |    |       |
| EYES/OPTIC N.    |       |       |    |                |        | HEART           | ILEUM            |                |          | JEJUNUM         |    |       |
| LYMPH NODE, MES  |       |       |    |                |        | ADRENAL CORTEX  | MAMMARY GLAND    |                |          | ADRENAL MEDULLA |    |       |
| NERVE, SCIATIC   |       |       |    |                |        | STOMACH, GLD    | STOMACH, NONGLD  |                |          | MARROW          |    |       |
| OVARIES          |       |       |    |                |        | PANCREAS        | PARATHYROID      |                |          | RECTUM          |    |       |
| PITUITARY        |       |       |    |                |        | SAL. GLAND MAND | SKELETAL MUSCLE  |                |          | SKIN            |    |       |
| SPINAL CORD      |       |       |    |                |        | SPLEEN          | LYMPH NODE, MAND |                |          | URINARY BLADDER |    |       |
| UTERUS           |       |       |    |                |        | CERVIX          |                  |                |          |                 |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43492    | GROUP | 4: 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH.                                                                                                                                                    | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 |
|-------------------|----------|-------|-------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|----------|------------|----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             |        | MICRO: INFLAMMATION, SUBACUTE VACUOLATION, HEPATOCELLULAR HYPERPLASIA, HEPATOCELLULAR, CENTRILOBULAR PAS STAIN, NEGATIVE OIL RED O, POSITIVE PERIORTAL TO MIDZONAL |          |                |          | GRADE      | 1  |
| BRAIN             | 1.83     | 0.726 |                   |        |                                                                                                                                                                    |          |                |          |            | 1  |
| LIVER             | 12.28    | 4.873 |                   |        |                                                                                                                                                                    |          |                |          |            | 1  |
| KIDNEYS           | 1.96     | 0.778 |                   |        |                                                                                                                                                                    |          |                |          |            | 1  |
| HEART             | 1.05     | 0.417 |                   |        |                                                                                                                                                                    |          |                |          |            | P  |
| SPLEEN            | 0.59     | 0.234 | LUNGS             |        | GROSS: WHITE AREA(S) SEVERAL, PINPOINT, ALL LOBES                                                                                                                  |          |                |          |            | 2  |
| UTERUS/CX         | 0.51     | 0.202 |                   |        | MICRO: INFLAMMATION, CHRONIC CORRELATES WITH GROSS WHITE AREAS                                                                                                     |          |                |          |            |    |
| OVARIES/OVIDUCTS  | 0.1706   | 0.068 | LUNGS             |        | HISTIOCYTOSIS, ALVEOLAR CORRELATES WITH GROSS WHITE AREAS                                                                                                          |          |                |          |            |    |
| THYMUS GLAND      | 0.1830   | 0.073 |                   |        | INFILTRATION, GRANULOMATOUS MULTIPLE LAYERS OF HISTIOCYTES RIMMING BRONCHIOLAR LUMENS AND/OR GIANT CELLS IN AIRWAYS OR ALVEOLAR SPACES                             |          |                |          |            |    |
| ADRENAL GLANDS    | 0.0827   | 0.033 |                   |        | MICRO: NO SIGNIFICANT CHANGES OBSERVED                                                                                                                             |          |                |          |            |    |
| THYROIDS/PARA     | 0.0236   | 0.009 |                   |        | ONE PARATHYROID EXAMINED; OTHER NOT IN PLANE OF SECTION                                                                                                            |          |                |          |            |    |
| FINAL BODY WT (G) | 252.     |       |                   |        | MICRO: HYPERPLASIA, LYMPHOID                                                                                                                                       |          |                |          |            |    |
|                   |          |       |                   |        | THYROID GLAND ATROPHY                                                                                                                                              |          |                |          |            |    |
|                   |          |       |                   |        | SPLEEN HYPERTROPHY, FOLLICULAR CELL, SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED COLLOID                                                              |          |                |          |            |    |
|                   |          |       |                   |        | THYMUS GLAND                                                                                                                                                       |          |                |          |            |    |
|                   |          |       |                   |        | MICRO: CYST, ULTIMOBRANCHIAL                                                                                                                                       |          |                |          |            |    |
|                   |          |       |                   |        | HYPERTROPHY, FOLLICULAR CELL,                                                                                                                                      |          |                |          |            |    |
|                   |          |       |                   |        | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED COLLOID                                                                                                   |          |                |          |            |    |

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.                             | 4 3492 | GROUP | 4 : | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 07/28/00 | DATE OF DEATH: | 07/28/00 | STUDY DAY: | 93 |
|----------------------------------------|--------|-------|-----|----------------|--------|----------------|----------|----------------|----------|------------|----|
| GRADE                                  |        |       |     |                |        |                |          |                |          |            |    |
| <b>NO SIGNIFICANT CHANGES OBSERVED</b> |        |       |     |                |        |                |          |                |          |            |    |
| <b>GROSS:ADRENAL GLANDS</b>            |        |       |     |                |        |                |          |                |          |            |    |
| AORTA                                  |        |       |     |                |        |                |          |                |          |            |    |
| CECUM                                  |        |       |     |                |        |                |          |                |          |            |    |
| BRAIN                                  |        |       |     |                |        |                |          |                |          |            |    |
| ESOPHAGUS                              |        |       |     |                |        |                |          |                |          |            |    |
| EYES/OPTIC N.                          |        |       |     |                |        |                |          |                |          |            |    |
| HEART                                  |        |       |     |                |        |                |          |                |          |            |    |
| KIDNEYS                                |        |       |     |                |        |                |          |                |          |            |    |
| JEJUNUM                                |        |       |     |                |        |                |          |                |          |            |    |
| MAMMARY GLAND                          |        |       |     |                |        |                |          |                |          |            |    |
| NERVE,SCIATIC                          |        |       |     |                |        |                |          |                |          |            |    |
| RECTUM                                 |        |       |     |                |        |                |          |                |          |            |    |
| SKIN                                   |        |       |     |                |        |                |          |                |          |            |    |
| PITUITARY                              |        |       |     |                |        |                |          |                |          |            |    |
| SPINAL CORD                            |        |       |     |                |        |                |          |                |          |            |    |
| SPLIEN                                 |        |       |     |                |        |                |          |                |          |            |    |
| LYMPH NODE, MAND                       |        |       |     |                |        |                |          |                |          |            |    |
| THYMUS GLAND                           |        |       |     |                |        |                |          |                |          |            |    |
| URINARY BLADDER                        |        |       |     |                |        |                |          |                |          |            |    |
| UTERUS                                 |        |       |     |                |        |                |          |                |          |            |    |
| MICRO:AORTA                            |        |       |     |                |        |                |          |                |          |            |    |
| STERNEBRAE                             |        |       |     |                |        |                |          |                |          |            |    |
| CECUM                                  |        |       |     |                |        |                |          |                |          |            |    |
| COLON                                  |        |       |     |                |        |                |          |                |          |            |    |
| EYES/OPTIC N.                          |        |       |     |                |        |                |          |                |          |            |    |
| HEART                                  |        |       |     |                |        |                |          |                |          |            |    |
| KIDNEYS                                |        |       |     |                |        |                |          |                |          |            |    |
| LYMPH NODE, MES                        |        |       |     |                |        |                |          |                |          |            |    |
| ADRENAL MEDULLA                        |        |       |     |                |        |                |          |                |          |            |    |
| NERVE,SCIATIC                          |        |       |     |                |        |                |          |                |          |            |    |
| MARRROW, STERN                         |        |       |     |                |        |                |          |                |          |            |    |
| RECTUM                                 |        |       |     |                |        |                |          |                |          |            |    |
| SKIN                                   |        |       |     |                |        |                |          |                |          |            |    |
| PITUITARY                              |        |       |     |                |        |                |          |                |          |            |    |
| SPINAL CORD                            |        |       |     |                |        |                |          |                |          |            |    |
| URINARY BLADDER                        |        |       |     |                |        |                |          |                |          |            |    |
| UTERUS                                 |        |       |     |                |        |                |          |                |          |            |    |
| STERNEBRAE                             |        |       |     |                |        |                |          |                |          |            |    |
| CECUM                                  |        |       |     |                |        |                |          |                |          |            |    |
| LIVER                                  |        |       |     |                |        |                |          |                |          |            |    |
| OVARIES                                |        |       |     |                |        |                |          |                |          |            |    |
| SAL. GLAND MAND                        |        |       |     |                |        |                |          |                |          |            |    |
| SKELETAL MUSCLE                        |        |       |     |                |        |                |          |                |          |            |    |
| STOMACH                                |        |       |     |                |        |                |          |                |          |            |    |
| TRACHEA                                |        |       |     |                |        |                |          |                |          |            |    |
| VAGINA                                 |        |       |     |                |        |                |          |                |          |            |    |
| STOMACH, NONGLD                        |        |       |     |                |        |                |          |                |          |            |    |
| PARATHYROID                            |        |       |     |                |        |                |          |                |          |            |    |
| SAL. GLAND MAND                        |        |       |     |                |        |                |          |                |          |            |    |
| SKELETAL MUSCLE                        |        |       |     |                |        |                |          |                |          |            |    |
| LYMPH NODE, MAND                       |        |       |     |                |        |                |          |                |          |            |    |
| TRACHEA                                |        |       |     |                |        |                |          |                |          |            |    |
| CERVIX                                 |        |       |     |                |        |                |          |                |          |            |    |
| MAMMARY GLAND                          |        |       |     |                |        |                |          |                |          |            |    |
| ILEUM                                  |        |       |     |                |        |                |          |                |          |            |    |
| DUODENUM                               |        |       |     |                |        |                |          |                |          |            |    |
| LIEUM                                  |        |       |     |                |        |                |          |                |          |            |    |
| LYMPH NODE, MES                        |        |       |     |                |        |                |          |                |          |            |    |
| PANCREAS                               |        |       |     |                |        |                |          |                |          |            |    |
| SAL. GLAND MAND                        |        |       |     |                |        |                |          |                |          |            |    |
| SKELETAL MUSCLE                        |        |       |     |                |        |                |          |                |          |            |    |
| LYMPH NODE, MAND                       |        |       |     |                |        |                |          |                |          |            |    |
| TRACHEA                                |        |       |     |                |        |                |          |                |          |            |    |
| CERVIX                                 |        |       |     |                |        |                |          |                |          |            |    |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

## A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BERIP

TABLE 120 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | 43503 | GROUP | 4: | 1000 MG/KG/DAY | FEMALE | SCHEDULED EUTH  | 07/28/00         | DATE OF DEATH:  | 07/28/00 | STUDY DAY:       | 93 | GRADE |
|------------|-------|-------|----|----------------|--------|-----------------|------------------|-----------------|----------|------------------|----|-------|
|            |       |       |    |                |        | STOMACH         | LYMPH NODE, MAND | THYMUS GLAND    |          | THYROID GLANDS   |    |       |
|            |       |       |    |                |        | TRACHEA         | URINARY BLADDER  | UTERUS          |          | VAGINA           |    |       |
|            |       |       |    |                |        | CERVIX          |                  |                 |          |                  |    |       |
|            |       |       |    |                |        | MICRO: AORTA    | STERNEBRAE       | OVIDUCTS        |          | BRAIN            |    |       |
|            |       |       |    |                |        | CECUM           | COLON            | DUODENUM        |          | ESOPHAGUS        |    |       |
|            |       |       |    |                |        | EYES/OPTIC N.   | HEART            | ILEUM           |          | JEJUNUM          |    |       |
|            |       |       |    |                |        | KIDNEYS         | LYMPH NODE, MES  | ADRENAL CORTEX  |          | MAMMARY GLAND    |    |       |
|            |       |       |    |                |        | ADRENAL MEDULLA | NERVE, SCIATIC   | STOMACH, GLD    |          | STOMACH, NONGLD  |    |       |
|            |       |       |    |                |        | MARROW, STERN   | OVARIES          | PANCREAS        |          | PARATHYROID      |    |       |
|            |       |       |    |                |        | RECTUM          | PITUITARY        | SAL. GLAND MAND |          | SKELETAL MUSCLE  |    |       |
|            |       |       |    |                |        | SKIN            | SPINAL CORD      | SPLIFFEN        |          | LYMPH NODE, MAND |    |       |
|            |       |       |    |                |        | TRACHEA         | URINARY BLADDER  | VAGINA          |          | CERVIX           |    |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT  
PGRHv4-28  
12/11/2001

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43289    | GROUP | 1:               | 0 MG/KG/DAY | MALE                                                     | SCHEDULED EUTH | 08/23/00          | DATE OF DEATH:   | 08/23/00 | STUDY DAY: | 119 |
|-------------------|----------|-------|------------------|-------------|----------------------------------------------------------|----------------|-------------------|------------------|----------|------------|-----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |             | MICRO: INFLAMMATION, SUBACUTE                            |                |                   |                  |          | GRADE      |     |
| BRAIN             | 1.99     | 0.355 |                  |             | VACUOLATION, HEPATOCELLULAR                              |                |                   |                  |          |            | 1   |
| LIVER             | 15.04    | 2.681 | LUNGS            |             | DARK RED AREA (S)                                        |                |                   |                  |          |            | 1   |
| KIDNEYS           | 3.61     | 0.643 |                  |             | FEW, IRREGULARLY SHAPED, ALL LOBES                       |                |                   |                  |          |            | P   |
| HEART             | 1.84     | 0.328 | LUNGS            |             | MICRO: NO SIGNIFICANT CHANGES OBSERVED                   |                |                   |                  |          |            |     |
| SPLEEN            | 0.62     | 0.111 |                  |             | NO CORRELATE TO GROSS RED AREAS                          |                |                   |                  |          |            |     |
| PROSTATE          | 1.03     | 0.184 | THYROID GLANDS   |             | MICRO: HYPERTROPHY, FOLLICULAR CELLI                     |                |                   |                  |          |            |     |
| RT TESTIS         | 1.73     | 0.308 |                  |             | ONE THYROID EXAMINED; OTHER NOT PRESENT; RECUT EVALUATED |                |                   |                  |          |            |     |
| LT TESTIS         | 1.71     | 0.305 | NO SIGNIFICANT   |             |                                                          |                |                   |                  |          |            |     |
| RT EPIDIDYMIS     | 0.75     | 0.134 | CHANGES OBSERVED |             | GROSS: ADRENAL GLANDS                                    | AORTA          | STERNEBRAE        | BRAIN            |          |            |     |
| LT EPIDIDYMIS     | 0.78     | 0.139 |                  |             | CECUM                                                    | COLON          | DUODENUM          | ESOPHAGUS        |          |            |     |
| RT CAUDA EPID     | 0.3544   | 0.063 |                  |             | EYES/OPTIC N.                                            | HEART          | ILEUM             | JEJUNUM          |          |            |     |
| LT CAUDA EPID     | 0.3636   | 0.065 |                  |             | KIDNEYS                                                  | LIVER          | LYMPH NODE        | MES              |          |            |     |
| THYMUS GLAND      | 0.2074   | 0.037 |                  |             | PANCREAS                                                 | RT EPIDIDYMIS  | LT EPIDIDYMIS     | RECTUM           |          |            |     |
| ADRENAL GLANDS    | 0.0540   | 0.010 |                  |             | PITUITARY                                                | PROSTATE       | SAL. GLAND MAND   | SEMINAL VESICLES |          |            |     |
| THYROIDS/ PARA    | 0.0273   | 0.005 |                  |             | SKELLETAL MUSCLE                                         | SKIN           | SPINAL CORD       | SPLEEN           |          |            |     |
| FINAL BODY WT (G) | 561.     |       |                  |             | STOMACH                                                  | LYMPH NODE     | MAND THYMUS GLAND | THYROID GLAND    |          |            |     |
|                   |          |       |                  |             | RT TESTIS                                                | LT TESTIS      | URINARY BLADDER   | TRACHEA          |          |            |     |
|                   |          |       |                  |             | MICRO: LUNGS                                             | PROSTATE       |                   |                  |          |            |     |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-106012  
 SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43295  | GROUP    | 1:               | 0 MG/KG/DAY           | MALE                          | SCHEDULED EUTH  | 08/23/00         | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 | GRADE |
|-------------------|--------|----------|------------------|-----------------------|-------------------------------|-----------------|------------------|----------------|----------|------------|-----|-------|
| ORGAN WEIGHT      |        | ABS. (G) | REL.             | LIVER                 | MICRO: INFLAMMATION, SUBACUTE |                 |                  |                |          |            |     |       |
| BRAIN             | 1.98   | 0.345    | NO SIGNIFICANT   | GROSS: ADRENAL GLANDS | AORTA                         | STERNEBRAE      |                  |                |          |            |     |       |
| LIVER             | 15.58  | 2.714    | CHANGES OBSERVED | CECUM                 | COLON                         | DUODENUM        |                  |                |          |            |     |       |
| KIDNEYS           | 4.06   | 0.707    |                  |                       | EYES/OPTIC N.                 | HEART           | ESOPHAGUS        |                |          |            |     |       |
| HEART             | 1.61   | 0.280    |                  |                       | KIDNEYS                       | ILIUM           | JEJUNUM          |                |          |            |     |       |
| SPLEEN            | 0.65   | 0.113    |                  |                       | NERVE, SCITATIC               | LIVER           | LUNGS            |                |          |            |     |       |
| PROSTATE          | 1.29   | 0.225    |                  |                       | PANCREAS                      | LYMPH NODE, MES | MES              |                |          |            |     |       |
| RT TESTIS         | 1.70   | 0.296    |                  |                       | RECTUM                        | LT EPIDIDYMIS   | LT EPIDIDYMIS    |                |          |            |     |       |
| LT TESTIS         | 1.71   | 0.298    |                  |                       | SEMINAL VESICLES              | PITUITARY       | PROSTATE         |                |          |            |     |       |
| RT EPIDIDYMIS     | 0.74   | 0.129    |                  |                       | SKELLETAL MUSCLE              | PROSTATE        | SAL. GLAND MAND  |                |          |            |     |       |
| LT EPIDIDYMIS     | 0.72   | 0.125    |                  |                       | SPLEEN                        | STOMACH         | SPINAL CORD      |                |          |            |     |       |
| RT CAUDA EPID     | 0.3007 | 0.052    |                  |                       | THYROID GLANDS                | STOMACH         | LYMPH NODE, MAND |                |          |            |     |       |
| LT CAUDA EPID     | 0.3127 | 0.054    |                  |                       | VAS DEFERENS                  | RT TESTIS       | THYMUS GLAND     |                |          |            |     |       |
| THYMUS GLAND      | 0.3309 | 0.058    |                  |                       | MICRO: LUNGS                  | URINARY BLADDER | TRACHEA          |                |          |            |     |       |
| ADRENAL GLANDS    | 0.0636 | 0.011    |                  |                       | PROSTATE                      | PROSTATE        |                  |                |          |            |     |       |
| THYROIDS/ PARA    | 0.0313 | 0.005    |                  |                       |                               |                 | THYROID GLANDS   |                |          |            |     |       |
| FINAL BODY WT (G) | 574.   |          |                  |                       |                               |                 |                  |                |          |            |     |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43308    | GROUP | 1:                                                | 0 MG/KG/DAY                                     | MALE            | SCHEDULED EUTH   | 08/23/00        | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 |
|-------------------|----------|-------|---------------------------------------------------|-------------------------------------------------|-----------------|------------------|-----------------|----------------|----------|------------|-----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS                                           | GROSS: DEPRESSED AREA (S)                       |                 |                  |                 |                |          | GRADE      | P   |
| BRAIN             | 1.91     | 0.345 | TWO, LESS THAN 1 MM IN DIAMETER, IN CORTEX, RIGHT |                                                 |                 |                  |                 |                |          |            | 1   |
| LIVER             | 14.92    | 2.693 | LIVER                                             | MICRO: VACUOLATION, HEPATOCELLULAR              |                 |                  |                 |                |          |            | 1   |
| KIDNEYS           | 3.53     | 0.637 |                                                   | INFILTRATION, SUBACUTE                          |                 |                  |                 |                |          |            | 1   |
| HEART             | 1.69     | 0.305 | LUNGS                                             | GROSS: DARK RED AREA (S)                        |                 |                  |                 |                |          |            | 1   |
| SPLEEN            | 0.69     | 0.125 |                                                   | ONE, 2 MM IN DIAMETER, RIGHT DIAPHRAGMATIC LOBE |                 |                  |                 |                |          |            | P   |
| PROSTATE          | 1.49     | 0.269 | LUNGS                                             | MICRO: MINERALIZATION, VASCULAR                 |                 |                  |                 |                |          |            | 1   |
| RT TESTIS         | 1.42     | 0.256 |                                                   | NO CORRELATE TO GROSS RED AREAS                 |                 |                  |                 |                |          |            | 1   |
| LT TESTIS         | 1.35     | 0.244 | PROSTATE                                          | MICRO: INFILTRATION, CHRONIC ACTIVE             |                 |                  |                 |                |          |            | 1   |
| RT EPIDIDYMIS     | 0.74     | 0.134 | NO SIGNIFICANT                                    |                                                 |                 |                  |                 |                |          |            |     |
| LT EPIDIDYMIS     | 0.71     | 0.128 | CHANGES OBSERVED                                  | GROSS: ADRENAL GLANDS                           | AORTA           | STERNEBRAE       | BRAIN           |                |          |            |     |
| RT CAUDA EPID     | 0.3278   | 0.059 |                                                   | CECUM                                           | COLON           | DUODENUM         | ESOPHAGUS       |                |          |            |     |
| LT CAUDA EPID     | 0.3340   | 0.060 |                                                   | EYES/OPTIC N.                                   | HEART           | ILEUM            | JEJUNUM         |                |          |            |     |
| THYMUS GLAND      | 0.2840   | 0.051 |                                                   | LIVER                                           | LYMPH NODE      | MES              | NERVE, SCIATIC  | PANCREAS       |          |            |     |
| ADRENAL GLANDS    | 0.0569   | 0.010 |                                                   | RT EPIDIDYMIS                                   | RECTUM          | PITUITARY        |                 |                |          |            |     |
| THYROIDS/PARA     | 0.0243   | 0.004 |                                                   | PROSTATE                                        | SAL. GLAND MAND | SEMINAL VESICLES | SKELETAL MUSCLE |                |          |            |     |
| FINAL BODY WT (G) | 554.     |       |                                                   | SKIN                                            | SPINAL CORD     | SPLEEN           | STOMACH         |                |          |            |     |
|                   |          |       |                                                   | LYMPH NODE, MAND THYMUS GLAND                   | THYROID GLAND   | RT TESTIS        | RT TESTIS       |                |          |            |     |
|                   |          |       |                                                   | LT TESTIS                                       | TRACHEA         | VAS DEFERENS     | URINARY BLADDER |                |          |            |     |
|                   |          |       |                                                   | MICRO: THYROID GLANDS                           |                 |                  |                 |                |          |            |     |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43316    | GROUP | 1:               | 0 MG/KG/DAY                     | MALE            | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | PAGE 4 |
|-------------------|----------|-------|------------------|---------------------------------|-----------------|----------------|----------|----------------|----------|----------------|--------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE   |                 |                |          |                |          |                |        |
| BRAIN             | 2.17     | 0.425 | LUNGS            | MICRO: MINERALIZATION, VASCULAR |                 |                |          |                |          |                |        |
| LIVER             | 13.22    | 2.587 | NO SIGNIFICANT   |                                 |                 |                |          |                |          |                |        |
| KIDNEYS           | 3.30     | 0.646 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS           | AORTA           |                |          |                |          |                |        |
| HEART             | 1.46     | 0.286 |                  | CECUM                           | COLON           |                |          |                |          |                |        |
| SPLEEN            | 0.70     | 0.137 |                  | EYES/OPTIC N.                   | HEART           |                |          |                |          |                |        |
| PROSTATE          | 0.99     | 0.194 |                  | KIDNEYS                         | LILEUM          |                |          |                |          |                |        |
| RT TESTIS         | 1.74     | 0.341 |                  | NERVE, SCIATIC                  | LYMPH NODE, MES |                |          |                |          |                |        |
| LT TESTIS         | 1.65     | 0.323 |                  | PANCREAS                        | LT EPIDIDYMIS   |                |          |                |          |                |        |
| RT EPIDIDYMIS     | 0.71     | 0.139 |                  | RECTUM                          | PROSTATE        |                |          |                |          |                |        |
| LT EPIDIDYMIS     | 0.73     | 0.143 |                  | SEMINAL VESICLES                | SKELETAL MUSCLE |                |          |                |          |                |        |
| RT CAUDA EPID     | 0.2863   | 0.056 |                  | SPLEEN                          | STOMACH         |                |          |                |          |                |        |
| LT CAUDA EPID     | 0.2963   | 0.058 |                  | THYROID GLANDS                  | RT TESTIS       |                |          |                |          |                |        |
| THYMUS GLAND      | 0.4229   | 0.083 |                  | VAS DEFERENS                    | URINARY BLADDER |                |          |                |          |                |        |
| ADRENAL GLANDS    | 0.0823   | 0.016 |                  | MICRO: PROSTATE                 | THYROID GLANDS  |                |          |                |          |                |        |
| THYROIDS/ PARA    | 0.0294   | 0.006 |                  |                                 |                 |                |          |                |          |                |        |
| FINAL BODY WT (G) | 511.     |       |                  |                                 |                 |                |          |                |          |                |        |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43326    | GROUP | 1:                              | 0 MG/KG/DAY                                                                   | MALE              | SCHEDULED EUTH                | 08/23/00 | DATE OF DEATH: 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|---------------------------------|-------------------------------------------------------------------------------|-------------------|-------------------------------|----------|-------------------------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | GENERAL COMMENT                 | GROSS:                                                                        | MECHANICAL TRAUMA |                               |          |                         |                | P     |
| BRAIN             | 1.80     | 0.354 |                                 | PROXTMAL TAIL BROKEN                                                          |                   |                               |          |                         |                |       |
| LIVER             | 13.17    | 2.587 | LIVER                           | MICRO: INFILTRATION, SUBACUTE VACUOLATION, HEPATOCELLULAR                     |                   |                               |          |                         |                | 1     |
| KIDNEYS           | 2.80     | 0.550 | LUNGS                           | MICRO: MINERALIZATION, VASCULAR INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR |                   |                               |          |                         |                | 1     |
| HEART             | 1.61     | 0.316 |                                 | MICRO: INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR                          |                   |                               |          |                         |                | 1     |
| SPLEEN            | 0.56     | 0.110 |                                 | MICRO: INFILTRATION, CHRONIC HISTIOCYTOSIS, ALVEOLAR                          |                   |                               |          |                         |                | 1     |
| PROSTATE          | 1.27     | 0.250 | PROSTATE                        | MICRO: INFILTRATION, CHRONIC ACTIVE HYPERTROPHY, FOLLICULAR CELL              |                   |                               |          |                         |                | 1     |
| RT TESTIS         | 1.54     | 0.303 | THYROID GLANDS                  | MICRO: CYST, UTERINOBANCHIAL HYPERTROPHY, FOLLICULAR CELL                     |                   |                               |          |                         |                | 1     |
| LT TESTIS         | 1.40     | 0.275 |                                 |                                                                               |                   |                               |          |                         |                | 1     |
| RT EPIDIDYMIS     | 0.62     | 0.122 |                                 |                                                                               |                   |                               |          |                         |                | 1     |
| LT EPIDIDYMIS     | 0.53     | 0.104 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                                         | AORTA             | STERNEBRAE                    |          |                         |                |       |
| RT CAUDA EPID     | 0.2418   | 0.048 |                                 | CECUM                                                                         | COLON             | DUODENUM                      |          |                         |                |       |
| LT CAUDA EPID     | 0.2355   | 0.046 |                                 | EYES/OPTIC N.                                                                 | HEART             | ESOPHAGUS                     |          |                         |                |       |
| THYMUS GLAND      | 0.2999   | 0.059 |                                 | KIDNEYS                                                                       | ILIUM             | JEJUNUM                       |          |                         |                |       |
| ADRENAL GLANDS    | 0.0714   | 0.014 |                                 | NERVE, SCITATIC                                                               | LIVER             | LUNG                          |          |                         |                |       |
| THYROIDS/PARA     | 0.0317   | 0.006 |                                 | RECTUM                                                                        | PANCREAS          | LT EPIDIDYMIS                 |          |                         |                |       |
| FINAL BODY WT (G) | 509.     |       |                                 | SEMINAL VESICLES                                                              | PITUITARY         | PROSTATE                      |          |                         |                |       |
|                   |          |       |                                 | SPLIEEN                                                                       | SKELETAL MUSCLE   | SKIN                          |          |                         |                |       |
|                   |          |       |                                 | THYROID GLANDS                                                                | STOMACH           | SPINAL CORD                   |          |                         |                |       |
|                   |          |       |                                 | RT TESTIS                                                                     | RT TESTIS         | LYMPH NODE, MAND THYMUS GLAND |          |                         |                |       |
|                   |          |       |                                 | VAS DEFERENS                                                                  | URINARY BLADDER   | LT TESTIS                     |          |                         |                |       |
|                   |          |       |                                 |                                                                               |                   | TRACHEA                       |          |                         |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43285    | GROUP | 2:                    | 100 MG/KG/DAY                 | MALE | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | PAGE 6 |
|-------------------|----------|-------|-----------------------|-------------------------------|------|----------------|----------|----------------|----------|----------------|--------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                 | MICRO: INFLAMMATION, SUBACUTE |      |                |          |                |          |                |        |
| BRAIN             | 2.11     | 0.351 | THYROID GLANDS        | MICRO: CYST, ULTIMOBRANCHIAL  |      |                |          |                |          |                |        |
| LIVER             | 17.35    | 2.887 | NO SIGNIFICANT        |                               |      |                |          |                |          |                |        |
| KIDNEYS           | 3.87     | 0.644 | CHANGES OBSERVED      |                               |      |                |          |                |          |                |        |
| HEART             | 1.72     | 0.286 | GROSS: ADRENAL GLANDS | AORTA                         |      |                |          |                |          |                |        |
| SPLEEN            | 0.78     | 0.130 | CECUM                 | COLON                         |      |                |          |                |          |                |        |
| PROSTATE          | 0.68     | 0.113 | EYES/OPTIC N.         | HEART                         |      |                |          |                |          |                |        |
| RT TESTIS         | 1.70     | 0.283 | KIDNEYS               | LIVER                         |      |                |          |                |          |                |        |
| LT TESTIS         | 1.76     | 0.293 | NERVE, SCIATIC        | PANCREAS                      |      |                |          |                |          |                |        |
| RT EPIDIDYMIS     | 0.73     | 0.121 | RECTUM                | PITUITARY                     |      |                |          |                |          |                |        |
| LT EPIDIDYMIS     | 0.74     | 0.123 | SEMINAL VESICLES      | SKELETAL MUSCLE               |      |                |          |                |          |                |        |
| RT CAUDA EPID     | 0.3264   | 0.054 | SPLEEN                | STOMACH                       |      |                |          |                |          |                |        |
| LT CAUDA EPID     | 0.3583   | 0.060 | THYROID GLANDS        | RT TESTIS                     |      |                |          |                |          |                |        |
| THYMUS GLAND      | 0.2941   | 0.049 | VAS DEFERENS          | URINARY BLADDER               |      |                |          |                |          |                |        |
| ADRENAL GLANDS    | 0.0686   | 0.011 | MICRO: LUNGS          | PROSTATE                      |      |                |          |                |          |                |        |
| THYROIDS/PARA     | 0.0416   | 0.007 |                       |                               |      |                |          |                |          |                |        |
| FINAL BODY WT (G) | 601.     |       |                       |                               |      |                |          |                |          |                |        |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43293    | GROUP | 2: 100 MG/KG/DAY | MALE                           | SCHEDULED EUTHI | 08/23/00        | DATE OF DEATH:    | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|------------------|--------------------------------|-----------------|-----------------|-------------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE  |                 |                 |                   |          |                | 1     |
| BRAIN             | 2.13     | 0.373 | PROSTATE         | MICRO: HYPERTROPHY, EPITHELIAL |                 |                 |                   |          |                | 1     |
| LIVER             | 17.06    | 2.988 | NO SIGNIFICANT   |                                |                 |                 |                   |          |                |       |
| KIDNEYS           | 4.35     | 0.762 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS          | AORTA           | STERNEBRAE      |                   |          |                |       |
| HEART             | 1.80     | 0.315 |                  | CECUM                          | COLON           | DUODENUM        | BRAIN             |          |                |       |
| SPLEEN            | 0.79     | 0.138 |                  | EYES/OPTIC N.                  | HEART           | ILEUM           | ESOPHAGUS         |          |                |       |
| PROSTATE          | 0.89     | 0.156 |                  | KIDNEYS                        | LIVER           | LYMPH NODE, MES | JEJUNUM           |          |                |       |
| RT TESTIS         | 1.53     | 0.268 |                  | NERVE, SCIATIC                 | PANCREAS        | RT EPIDIDYMIS   | LUNGS             |          |                |       |
| LT TESTIS         | 1.58     | 0.277 |                  | RECTUM                         | PITUITARY       | PROSTATE        | LT EPIDIDYMIS     |          |                |       |
| RT EPIDIDYMIS     | 0.72     | 0.126 |                  | SEMINAL VESICLES               | SKELETAL MUSCLE | SKIN            | SAL. GLAND MAND   |          |                |       |
| LT EPIDIDYMIS     | 0.81     | 0.142 |                  | SPLEEN                         | STOMACH         | LYMPH NODE      | SPINAL CORD       |          |                |       |
| RT CAUDA EPID     | 0.3224   | 0.056 |                  | THYROID GLANDS                 | RT TESTIS       | LT TESTIS       | MAND THYMUS GLAND |          |                |       |
| LT CAUDA EPID     | 0.4092   | 0.072 |                  | VAS DEFERENS                   | URINARY BLADDER |                 | TRACHEA           |          |                |       |
| THYMUS GLAND      | 0.2672   | 0.047 |                  | MICRO: LUNGS                   | THYROID GLANDS  |                 |                   |          |                |       |
| ADRENAL GLANDS    | 0.0609   | 0.011 |                  |                                |                 |                 |                   |          |                |       |
| THYROIDS/PARA     | 0.0273   | 0.005 |                  |                                |                 |                 |                   |          |                |       |
| FINAL BODY WT (G) | 571.     |       |                  |                                |                 |                 |                   |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43311    | GROUP | 2: 100 MG/KG/DAY | MALE                          | SCHEDULED EUTHI  | 08/23/00         | DATE OF DEATH:  | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|------------------|-------------------------------|------------------|------------------|-----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE |                  |                  |                 |          |                | 1     |
| BRAIN             | 2.14     | 0.451 | NO SIGNIFICANT   |                               |                  |                  |                 |          |                |       |
| LIVER             | 14.10    | 2.968 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE       | BRAIN           |          |                |       |
| KIDNEYS           | 3.55     | 0.747 |                  | CECUM                         | COLON            | DUODENUM         | ESOPHAGUS       |          |                |       |
| HEART             | 1.56     | 0.328 |                  | EYES/OPTIC N.                 | HEART            | ILEUM            | JEJUNUM         |          |                |       |
| SPLEEN            | 0.83     | 0.175 |                  | KIDNEYS                       | LIVER            | LYMPH NODE, MES  | LUNGS           |          |                |       |
| PROSTATE          | 0.93     | 0.196 |                  | NERVE, SCIATIC                | PANCREAS         | RT EPIDIDYMIS    | LT EPIDIDYMIS   |          |                |       |
| RT TESTIS         | 1.68     | 0.354 |                  | RECTUM                        | PITUITARY        | PROSTATE         | SAL. GLAND MAND |          |                |       |
| LT TESTIS         | 1.69     | 0.356 |                  | SEMINAL VESICLES              | SKELLETAL MUSCLE | PROSTATE         | SPINAL CORD     |          |                |       |
| RT EPIDIDYMIS     | 0.83     | 0.175 |                  | SPLEEN                        | STOMACH          | SKIN             |                 |          |                |       |
| LT EPIDIDYMIS     | 0.77     | 0.162 |                  | THYROID GLANDS                | RT TESTIS        | LYMPH NODE, MAND | THYMUS GLAND    |          |                |       |
| RT CAUDA EPID     | 0.3558   | 0.075 |                  | VAS DEFERENS                  | URINARY BLADDER  | LT TESTIS        | TRACHEA         |          |                |       |
| LT CAUDA EPID     | 0.3440   | 0.072 |                  | MICRO: LUNGS                  | PROSTATE         | THYROID GLANDS   |                 |          |                |       |
| THYMUS GLAND      | 0.2363   | 0.050 |                  |                               |                  |                  |                 |          |                |       |
| ADRENAL GLANDS    | 0.0688   | 0.014 |                  |                               |                  |                  |                 |          |                |       |
| THYROIDS/PARA     | 0.0291   | 0.006 |                  |                               |                  |                  |                 |          |                |       |
| FINAL BODY WT (G) | 475.     |       |                  |                               |                  |                  |                 |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43320    | GROUP | 2: 100 MG/KG/DAY | MALE                          | SCHEDULED EUTH  | 08/23/00         | DATE OF DEATH:  | 08/23/00 | STUDY DAY: 119 | PAGE | 9 |
|-------------------|----------|-------|------------------|-------------------------------|-----------------|------------------|-----------------|----------|----------------|------|---|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE |                 |                  |                 |          |                |      |   |
| BRAIN             | 1.95     | 0.412 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL  |                 |                  |                 |          |                |      |   |
| LIVER             | 13.09    | 2.767 | NO SIGNIFICANT   |                               |                 |                  |                 |          |                |      |   |
| KIDNEYS           | 3.54     | 0.748 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS         | AORTA           | STERNEBRAE       | BRAIN           |          |                |      |   |
| HEART             | 1.47     | 0.311 |                  | CECUM                         | COLON           | DUODENUM         | ESOPHAGUS       |          |                |      |   |
| SPLEEN            | 0.68     | 0.144 |                  | EYES/OPTIC N.                 | HEART           | ILEUM            | JEJUNUM         |          |                |      |   |
| PROSTATE          | 1.00     | 0.211 |                  | KIDNEYS                       | LIVER           | LYMPH NODE, MES  | MES LUNGS       |          |                |      |   |
| RT TESTIS         | 1.42     | 0.300 |                  | NERVE, SCIATIC                | PANCREAS        | LT EPIDIDYMIS    | LT EPIDIDYMIS   |          |                |      |   |
| LT TESTIS         | 1.42     | 0.300 |                  | RECTUM                        | PITUITARY       | PROSTATE         | SAL. GLAND MAND |          |                |      |   |
| RT EPIDIDYMIS     | 0.60     | 0.127 |                  | SEMINAL VESICLES              | SKELETAL MUSCLE | SKIN             | SPINAL CORD     |          |                |      |   |
| LT EPIDIDYMIS     | 0.62     | 0.131 |                  | SPLLEEN                       | STOMACH         | LYMPH NODE, MAND | THYMUS GLAND    |          |                |      |   |
| RT CAUDA EPID     | 0.2486   | 0.053 |                  | THYROID GLANDS                | RT TESTIS       | LT TESTIS        | TRACHEA         |          |                |      |   |
| LT CAUDA EPID     | 0.2944   | 0.062 |                  | VAS DEFERENS                  | URINARY BLADDER |                  |                 |          |                |      |   |
| THYMUS GLAND      | 0.1383   | 0.029 |                  | MICRO: LUNGS                  | PROSTATE        |                  |                 |          |                |      |   |
| ADRENAL GLANDS    | 0.0526   | 0.011 |                  |                               |                 |                  |                 |          |                |      |   |
| THYROIDS/ PARA    | 0.0303   | 0.006 |                  |                               |                 |                  |                 |          |                |      |   |
| FINAL BODY WT (G) | 473.     |       |                  |                               |                 |                  |                 |          |                |      |   |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43340    | GROUP | 2: 100 MG/KG/DAY | MALE   | SCHEDULED EUTH                  | 08/23/00    | DATE OF DEATH:    | 08/23/00 | STUDY DAY: 119  | GRADE |
|-------------------|----------|-------|------------------|--------|---------------------------------|-------------|-------------------|----------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | GENERAL COMMENT  | GROSS: | ORGAN NOT POSITIVELY IDENTIFIED |             |                   |          |                 | P     |
| BRAIN             | 2.01     | 0.533 |                  |        | RIGHT EPIDIDYMIS                |             |                   |          |                 |       |
| LIVER             | 12.00    | 3.183 | LIVER            | MICRO: | INFLAMMATION, SUBACUTE          |             |                   |          |                 | 1     |
| KIDNEYS           | 2.86     | 0.759 | SENITAL VESICLES | GROSS: | SMALL                           |             |                   |          |                 | P     |
| HEART             | 1.47     | 0.390 |                  |        | RIGHT                           |             |                   |          |                 |       |
| SPLEEN            | 0.65     | 0.172 | RT TESTIS        | GROSS: | SMALL                           |             |                   |          |                 |       |
| PROSTATE          | 0.74     | 0.196 | COAGULATING GL   | GROSS: | SMALL                           |             |                   |          |                 | P     |
| RT TESTIS         | 0.20     | 0.053 |                  |        | RIGHT                           |             |                   |          |                 | P     |
| LT TESTIS         | 1.04     | 0.276 | NO SIGNIFICANT   |        |                                 |             |                   |          |                 |       |
| RT EPIDIDYMIS     | 0.06     | 0.016 | CHANGES OBSERVED | GROSS: | ADRENAL GLANDS                  | AORTA       | STERNEBRAE        |          | BRAIN           |       |
| LT EPIDIDYMIS     | 0.53     | 0.141 |                  |        | CECUM                           | COLON       | DUODENUM          |          | ESOPHAGUS       |       |
| LT CAUDA EPID     | 0.2047   | 0.054 |                  |        | EYES/OPTIC N.                   | HEART       | ILEUM             |          | JEJUNUM         |       |
| THYMUS GLAND      | 0.1939   | 0.051 |                  |        | KIDNEYS                         | LIVER       | LYMPH NODE, MES   |          | LUNGS           |       |
| ADRENAL GLANDS    | 0.0716   | 0.019 |                  |        | NERVE, SCATIAC                  | PANCREAS    | RT EPIDIDYMIS     |          | LT EPIDIDYMIS   |       |
| THYROIDS/PARA     | 0.0252   | 0.007 |                  |        | RECTUM                          | PITUITARY   | PROSTATE          |          | SAL. GLAND MAND |       |
| FINAL BODY WT (G) | 377.     |       |                  |        | SKELLETAL MUSCLE                | SKIN        | SPINAL CORD       |          | SPLEEN          |       |
|                   |          |       |                  |        | STOMACH                         | LYMPH NODE, | MAND THYMUS GLAND |          | THYROID GLANDS  |       |
|                   |          |       |                  |        | LT TESTIS                       | TRACHEA     | VAS DEFERENS      |          | URINARY BLADDER |       |
|                   |          |       |                  |        | MICRO:LUNGS                     | PROSTATE    | THYROID GLANDS    |          |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43290    | GROUP | 3 : 300 MG./KG./DAY | MALE    | SCHEDULED EUTH                          | 08/23/00         | DATE OF DEATH:   | 08/23/00 | STUDY DAY: | 119   |
|-------------------|----------|-------|---------------------|---------|-----------------------------------------|------------------|------------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | GENERAL COMMENT     | GROSS : | ORGAN DAMAGED AT NEUROPSY               |                  |                  |          |            | GRADE |
| BRAIN             | 2.01     | 0.423 | LIVER               | MICRO:  | ADRENAL GLAND, RIGHT                    | P                |                  |          |            |       |
| LIVER             | 13.03    | 2.743 | LIVERS              | GROSS:  | INFILTRATION, SUBACUTE                  |                  |                  |          |            | 1     |
| KIDNEYS           | 3.32     | 0.699 | LONGS               |         | DARK RED AREA (S)                       |                  |                  |          |            | P     |
| HEART             | 1.46     | 0.307 |                     |         | MULTIPLE, IRREGULARLY SHAPED, ALL LOBES |                  |                  |          |            |       |
| SPLEEN            | 0.70     | 0.147 | LUNGS               | MICRO:  | NO SIGNIFICANT CHANGES OBSERVED         |                  |                  |          |            |       |
| PROSTATE          | 0.50     | 0.105 |                     |         | NO CORRELATION TO GROSS RED AREAS       |                  |                  |          |            |       |
| RT TESTIS         | 1.47     | 0.309 | THYROID GLANDS      | MICRO:  | CYST, UTERINOBANCHIAL                   |                  |                  |          |            |       |
| LT TESTIS         | 1.52     | 0.320 | TEETH               | GROSS:  | MALIGNED                                |                  |                  |          |            | 2     |
| RT EPIDIDYMIS     | 0.69     | 0.145 |                     |         | UPPER INCISOR, BILATERAL                |                  |                  |          |            | P     |
| LT EPIDIDYMIS     | 0.69     | 0.145 | TEETH               | GROSS:  | BROKEN                                  |                  |                  |          |            |       |
| RT CAUDA EPID     | 0.2892   | 0.061 |                     |         | UPPER INCISOR, BILATERAL                |                  |                  |          |            | P     |
| LT CAUDA EPID     | 0.3178   | 0.067 | NO SIGNIFICANT      |         |                                         |                  |                  |          |            |       |
| THYMUS GLAND      | 0.2907   | 0.061 | CHANGES OBSERVED    | GROSS:  | ADRENAL GLANDS                          | AORTA            |                  |          |            |       |
| ADRENAL GLANDS    | 0.0650   | 0.014 |                     |         | CECUM                                   | COLON            | STERNEBRAE       |          |            |       |
| THYROIDS/PARA     | 0.0350   | 0.007 |                     |         | EYES/OPTIC N.                           | DUODENUM         | ESOPHAGUS        |          |            |       |
| FINAL BODY WT (G) | 475.     |       |                     |         | KIDNEYS                                 | ILEUM            | JEJUNUM          |          |            |       |
|                   |          |       |                     |         | PANCREAS                                | LIVER            | LYMPH NODE, MES  |          |            |       |
|                   |          |       |                     |         | PITUITARY                               | RT EPIDIDYMIS    | NERVE, SCIATIC   |          |            |       |
|                   |          |       |                     |         | PROSTATE                                | RECTUM           | RECTUM           |          |            |       |
|                   |          |       |                     |         | SKELETAL MUSCLE                         | SAL. GLAND MAND  | SEMINAL VESICLES |          |            |       |
|                   |          |       |                     |         | STOMACH                                 | SPINAL CORD      | SPLEEN           |          |            |       |
|                   |          |       |                     |         | RT TESTIS                               | LYMPH NODE, MAND | THYROID GLAND    |          |            |       |
|                   |          |       |                     |         | URINARY BLADDER                         | LT TESTIS        | TRACHEA          |          |            |       |
|                   |          |       |                     |         | MICRO: LUNGS                            | PROSTATE         | VAS DEFERENS     |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43307    | GROUP | 3:               | 300 MG/KG/DAY | MALE                               | SCHEDULED EUTH  | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|------------------|---------------|------------------------------------|-----------------|----------|----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |               | MICRO: VACUOLATION, HEPATOCELLULAR |                 |          |                |          |                |       |
| BRAIN             | 2.02     | 0.374 |                  |               | INFILTRATION, SUBACUTE             |                 |          |                |          |                | 1     |
| LIVER             | 16.69    | 3.091 | LUNGS            |               | HISTIOCYTOSIS, ALVEOLAR            |                 |          |                |          |                | 1     |
| KIDNEYS           | 4.19     | 0.776 |                  |               | MINERALIZATION, VASCULAR           |                 |          |                |          |                | 2     |
| HEART             | 1.70     | 0.315 | PROSTATE         |               | INFILTRATION, SUBACUTE             |                 |          |                |          |                | 1     |
| SPLEEN            | 0.70     | 0.130 | THYROID GLANDS   |               | HYPERTROPHY, FOLLICULAR CELL       |                 |          |                |          |                | 1     |
| PROSTATE          | 1.20     | 0.222 |                  |               | CYST, UTEROBRANCHIAL               |                 |          |                |          |                | 1     |
| RT TESTIS         | 1.59     | 0.294 | NO SIGNIFICANT   |               |                                    |                 |          |                |          |                | 2     |
| LT TESTIS         | 1.62     | 0.300 | CHANGES OBSERVED |               | GROSS: ADRENAL GLANDS              | AORTA           |          |                |          |                |       |
| RT EPIDIDYMIS     | 0.66     | 0.122 |                  |               | CECUM                              | COLON           |          |                |          |                |       |
| LT EPIDIDYMIS     | 0.70     | 0.130 |                  |               | EYES/OPTIC N.                      | HEART           |          |                |          |                |       |
| RT CAUDA EPID     | 0.2854   | 0.053 |                  |               | KIDNEYS                            | LIVER           |          |                |          |                |       |
| LT CAUDA EPID     | 0.3102   | 0.057 |                  |               | NERVE, SCIATIC                     | PANCREAS        |          |                |          |                |       |
| THYMUS GLAND      | 0.3679   | 0.068 |                  |               | RECTUM                             | PITUITARY       |          |                |          |                |       |
| ADRENAL GLANDS    | 0.0536   | 0.010 |                  |               | SEMINAL VESICLES                   | SKELETAL MUSCLE |          |                |          |                |       |
| THYROIDS/PARA     | 0.0288   | 0.005 |                  |               | SPLEEN                             | STOMACH         |          |                |          |                |       |
| FINAL BODY WT (G) | 540.     |       |                  |               | THYROID GLANDS                     | RT TESTIS       |          |                |          |                |       |
|                   |          |       |                  |               | VAS DEFERENS                       | URINARY BLADDER |          |                |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 1.21 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43309    | GROUP | 3: 300 MG/KG/DAY | MALE | SCHEDULED EUTH                | 08/23/00         | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119   | GRADE |
|-------------------|----------|-------|------------------|------|-------------------------------|------------------|----------------|----------|------------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |      | MICRO: INFLAMMATION, SUBACUTE |                  |                |          | BRAIN            | 1     |
| BRAIN             | 2.05     | 0.341 |                  |      | VACUOLATION, HEPATOCELLULAR   |                  |                |          | ESOPHAGUS        | 1     |
| LIVER             | 17.85    | 2.970 | LUNGS            |      | MICRO: INFLAMMATION, CHRONIC  |                  |                |          | JEJUNUM          | 1     |
| KIDNEYS           | 4.75     | 0.790 |                  |      | HISTIOCYTOSIS, ALVEOLAR       |                  |                |          | JUGULAR          | 1     |
| HEART             | 1.84     | 0.306 | NO SIGNIFICANT   |      | GROSS: ADRENAL GLANDS         | AORTA            |                |          | STERNEBRAE       |       |
| SPLEEN            | 0.90     | 0.150 | CHANGES OBSERVED |      | CECUM                         | COLON            |                |          | DUODENUM         |       |
| PROSTATE          |          |       |                  |      | EYES/OPTIC N.                 | HEART            |                |          | ILEUM            |       |
| RT TESTIS         | 1.91     | 0.318 |                  |      | KIDNEYS                       | LIVER            |                |          | LYMPH NODE, MES  |       |
| LT TESTIS         | 1.98     | 0.329 |                  |      |                               | PANCREAS         |                |          | LT EPIDIDYMIS    |       |
| RT EPIDIDYMIS     | 0.84     | 0.140 |                  |      | NERVE, SCATATIC               | RECTUM           |                |          | PROSTATE         |       |
| LT EPIDIDYMIS     | 0.80     | 0.133 |                  |      | SEMINAL VESICLES              | PITUITARY        |                |          | SKIN             |       |
| RT CAUDA EPID     | 0.4189   | 0.070 |                  |      | SPLINEEN                      | SKELLETAL MUSCLE |                |          | SPINAL CORD      |       |
| LT CAUDA EPID     | 0.4033   | 0.067 |                  |      | THYROID GLANDS                | STOMACH          |                |          | LYMPH NODE, MAND |       |
| THYMUS GLAND      | 0.3740   | 0.062 |                  |      | RT TESTIS                     | RT TESTIS        |                |          | THYMUS GLAND     |       |
| ADRENAL GLANDS    | 0.0560   | 0.009 |                  |      | VAS DEFERENS                  | URINARY BLADDER  |                |          | TRACHEA          |       |
| THYROIDS/PARA     | 0.0319   | 0.005 |                  |      | MICRO: PROSTATE               | THYROID GLANDS   |                |          |                  |       |
| FINAL BODY WT (G) | 601.     |       |                  |      |                               |                  |                |          |                  |       |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO. | GROUP | 3: 300 MG/KG/DAY | MALE | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | GRADE |
|------------|-------|------------------|------|----------------|----------|----------------|----------|----------------|-------|
| 43309      |       |                  |      |                |          |                |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43318    | GROUP | 3 : 300 MG/KG/DAY               | MALE                                | SCHEDULED EUTH  | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|---------------------------------|-------------------------------------|-----------------|----------|----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS                         | GROSS: WHITE AREA(S)                |                 |          |                |          |                | P     |
| BRAIN             | 1.99     | 0.341 |                                 | IRREGULARLY SHAPED, BILATERAL       |                 |          |                |          |                |       |
| LIVER             | 16.16    | 2.772 | LIVER                           | MICRO: INFLAMMATION, SUBACUTE       |                 |          |                |          |                | 1     |
| KIDNEYS           | 4.00     | 0.686 | LUNGS                           | MICRO: MINERALIZATION, VASCULAR     |                 |          |                |          |                | 1     |
| HEART             | 1.79     | 0.307 | THYROID GLANDS                  | MICRO: HYPERTROPHY, FOLLICULAR CELL |                 |          |                |          |                | 1     |
| SPLEEN            | 0.91     | 0.156 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS               | AORTA           |          |                |          |                |       |
| PROSTATE          | 1.39     | 0.238 |                                 | CECUM                               | COLON           |          |                |          |                |       |
| RT TESTIS         | 1.56     | 0.268 |                                 | EYES/OPTIC N.                       | HEART           |          |                |          |                |       |
| LT TESTIS         | 1.52     | 0.261 |                                 | LIVER                               | DUODENUM        |          |                |          |                |       |
| RT EPIDIDYMIS     | 0.74     | 0.127 |                                 | PANCREAS                            | ILEUM           |          |                |          |                |       |
| LT EPIDIDYMIS     | 0.62     | 0.106 |                                 | PITUITARY                           | MES             |          |                |          |                |       |
| RT CAUDA EPID     | 0.2988   | 0.051 |                                 | SKIN                                | RECTUM          |          |                |          |                |       |
| LT CAUDA EPID     | 0.2614   | 0.045 |                                 | STOMACH                             | SAL. GLAND MAND |          |                |          |                |       |
| THYMUS GLAND      | 0.1868   | 0.032 |                                 | RT TESTIS                           | SPINAL CORD     |          |                |          |                |       |
| ADRENAL GLANDS    | 0.0485   | 0.008 |                                 | URINARY BLADDER                     | THYMUS GLAND    |          |                |          |                |       |
| THYROIDS/ PARA    | 0.0206   | 0.004 |                                 | MICRO: PROSTATE                     | TRACHEA         |          |                |          |                |       |
| FINAL BODY WT (G) | 583.     |       |                                 |                                     |                 |          |                |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43322    | GROUP | 3:                              | 300 MG/KG/DAY                                                    | MALE            | SCHEDULED EUTH.               | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119   |
|-------------------|----------|-------|---------------------------------|------------------------------------------------------------------|-----------------|-------------------------------|----------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           | MICRO: INFLAMMATION, SUBACUTE                                    |                 |                               |          |                |          |            | GRADE |
| BRAIN             | 2.18     | 0.447 | LUNGS                           | MICRO: INFLAMMATION, SUBACUTE                                    |                 |                               |          |                |          |            | 1     |
| LIVER             | 14.58    | 2.988 | PROSTATE                        | MICRO: INFLAMMATION, ACUTE                                       |                 |                               |          |                |          |            | 1     |
| KIDNEYS           | 3.47     | 0.711 | THYROID GLANDS                  | MICRO: INFLAMMATION, SUBACUTE                                    |                 |                               |          |                |          |            | 1     |
| HEART             | 1.62     | 0.332 |                                 | HYPERTROPHY, FOLLICULAR CELL                                     |                 |                               |          |                |          |            | 1     |
| SPLEEN            | 0.86     | 0.176 |                                 | SMALL FOLLICLES; RELATIVELY TALLER EPITHELIUM; DECREASED COLLOID |                 |                               |          |                |          |            | 1     |
| PROSTATE          | 0.99     | 0.203 |                                 |                                                                  |                 |                               |          |                |          |            |       |
| RT TESTIS         | 1.67     | 0.342 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS                                            | AORTA           | STERNEBRAE                    |          |                |          |            |       |
| LT TESTIS         | 1.64     | 0.336 |                                 | CECUM                                                            | COLON           | BRAIN                         |          |                |          |            |       |
| RT EPIDIDYMIS     | 0.73     | 0.150 |                                 | EYES/OPTIC N.                                                    | HEART           | ESOPHAGUS                     |          |                |          |            |       |
| LT EPIDIDYMIS     | 0.78     | 0.160 |                                 | KIDNEYS                                                          | LIVER           | JEJUNUM                       |          |                |          |            |       |
| RT CAUDA EPID     | 0.3295   | 0.068 |                                 | NERVE, SCITATIC                                                  | PANCREAS        | LUNGS                         |          |                |          |            |       |
| LT CAUDA EPID     | 0.3805   | 0.078 |                                 | RECTUM                                                           | PITUITARY       | LT EPIDIDYMIS                 |          |                |          |            |       |
| THYMUS GLAND      | 0.2866   | 0.059 |                                 | SEMINAL VESICLES                                                 | SKELETAL MUSCLE | PROSTATE                      |          |                |          |            |       |
| ADRENAL GLANDS    | 0.0613   | 0.013 |                                 | SPLEEN                                                           | SKIN            | SAL. GLAND MAND               |          |                |          |            |       |
| THYROIDS/PARA     | 0.0242   | 0.005 |                                 | THYROID GLANDS                                                   | STOMACH         | SPINAL CORD                   |          |                |          |            |       |
| FINAL BODY WT (G) | 488.     |       |                                 | VAS DEFERENS                                                     | RT TESTIS       | LYMPH NODE, MAND THYMUS GLAND |          |                |          |            |       |
|                   |          |       |                                 |                                                                  | URINARY BLADDER | TRACHEA                       |          |                |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43277    | GROUP | 4:               | 1000 MG/KG/DAY | MALE                               | SCHEDULED EUTH         | 08/23/00         | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | PAGE 17 |
|-------------------|----------|-------|------------------|----------------|------------------------------------|------------------------|------------------|----------------|----------|----------------|---------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |                | MICRO:                             | INFLAMMATION, SUBACUTE |                  |                |          | GRADE          |         |
| BRAIN             | 1.92     | 0.389 |                  |                | VACUOLATION, HEPATOCELLULAR        |                        |                  |                |          | 1              |         |
| LIVER             | 13.53    | 2.744 | LUNGS            |                | MICRO: INFLAMMATION, GRANULOMATOUS |                        |                  |                |          | 1              |         |
| KIDNEYS           | 3.24     | 0.657 | NO SIGNIFICANT   |                |                                    |                        |                  |                |          |                |         |
| HEART             | 1.54     | 0.312 | CHANGES OBSERVED |                | GROSS: ADRENAL GLANDS              | AORTA                  | STERNEBRAE       |                |          |                |         |
| SPLEEN            | 0.54     | 0.110 |                  |                | CECUM                              | COLON                  | DUODENUM         |                |          |                |         |
| PROSTATE          | 1.29     | 0.262 |                  |                | EYES/OPTIC N.                      | HEART                  | ESOPHAGUS        |                |          |                |         |
| RT TESTIS         | 1.50     | 0.304 |                  |                | KIDNEYS                            | LIVER                  | ILEUM            |                |          |                |         |
| LT TESTIS         | 1.56     | 0.316 |                  |                | NERVE, SCIATIC                     | PANCREAS               | LYMPH NODE, MES  |                |          |                |         |
| RT EPIDIDYMIS     | 0.70     | 0.142 |                  |                | RECTUM                             | PITUITARY              | LT EPIDIDYMIS    |                |          |                |         |
| LT EPIDIDYMIS     | 0.69     | 0.140 |                  |                | SEMINAL VESICLES                   | SKELLETAL MUSCLE       | PROSTATE         |                |          |                |         |
| RT CAUDA EPID     | 0.3075   | 0.062 |                  |                | SPLEEN                             | STOMACH                | SAL. GLAND MAND  |                |          |                |         |
| LT CAUDA EPID     | 0.2863   | 0.058 |                  |                | THYROID GLANDS                     | RT TESTIS              | SPINAL CORD      |                |          |                |         |
| THYMUS GLAND      | 0.2603   | 0.053 |                  |                | VAS DEFERENS                       | URINARY BLADDER        | LYMPH NODE, MAND |                |          |                |         |
| ADRENAL GLANDS    | 0.0419   | 0.008 |                  |                | MICRO: PROSTATE                    | LT TESTIS              | THYMUS GLAND     |                |          |                |         |
| THYROIDS/ PARA    | 0.0338   | 0.007 |                  |                |                                    |                        | TRACHEA          |                |          |                |         |
| FINAL BODY WT (G) | 493.     |       |                  |                |                                    |                        |                  |                |          |                |         |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43278    | GROUP | 4:               | 1000 MG/KG/DAY                      | MALE                               | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 | GRADE |
|-------------------|----------|-------|------------------|-------------------------------------|------------------------------------|----------------|----------|----------------|----------|------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE       |                                    |                |          |                |          |            |     |       |
| BRAIN             | 1.91     | 0.399 | LUNGS            | MICRO: MINERALIZATION, VASCULAR     |                                    |                |          |                |          |            |     | 1     |
| LIVER             | 12.42    | 2.593 |                  | HISTIOCYTOSIS, ALVEOLAR             |                                    |                |          |                |          |            |     | 1     |
| KIDNEYS           | 3.38     | 0.706 | SKIN             | GROSS: MASS                         |                                    |                |          |                |          |            |     | 1     |
| HEART             | 1.74     | 0.363 |                  |                                     |                                    |                |          |                |          |            |     | P     |
| SPLEEN            | 0.53     | 0.111 | THYROID GLANDS   | MICRO: HYPERTrophy, FOLLICULAR CELL | 4 X 3 X 2 MM, TAN, BUCCAL, MASS #1 |                |          |                |          |            |     |       |
| PROSTATE          | 1.38     | 0.288 | NO SIGNIFICANT   |                                     |                                    |                |          |                |          |            |     |       |
| RT TESTIS         | 1.46     | 0.305 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS               | AORTA                              |                |          |                |          |            |     |       |
| LT TESTIS         | 1.45     | 0.303 |                  | CECUM                               | COLON                              |                |          |                |          |            |     |       |
| RT EPIDIDYMIS     | 0.72     | 0.150 |                  | EYES/OPTIC N.                       | HEART                              |                |          |                |          |            |     |       |
| LT EPIDIDYMIS     | 0.67     | 0.140 |                  | KIDNEYS                             | LIVER                              |                |          |                |          |            |     |       |
| RT CAUDA EPID     | 0.2935   | 0.061 |                  | NERVE, SCATIAC                      | PANCREAS                           |                |          |                |          |            |     |       |
| LT CAUDA EPID     | 0.2933   | 0.061 |                  | RECTUM                              | PITUITARY                          |                |          |                |          |            |     |       |
| THYMUS GLAND      | 0.1742   | 0.036 |                  | SEMINAL VESICLES                    | SKELETAL MUSCLE                    |                |          |                |          |            |     |       |
| ADRENAL GLANDS    | 0.0467   | 0.010 |                  | STOMACH                             | LYMPH NODE, MAND THYMUS GLAND      |                |          |                |          |            |     |       |
| THYROIDS/PARA     | 0.0247   | 0.005 |                  | RT TESTIS                           | LYMPH NODE, MAND THYMUS GLAND      |                |          |                |          |            |     |       |
| FINAL BODY WT (G) | 479.     |       |                  | LT TESTIS                           | TRACHEA                            |                |          |                |          |            |     |       |
|                   |          |       |                  | URINARY BLADDER                     |                                    |                |          |                |          |            |     |       |
|                   |          |       |                  | MICRO: PROSTATE                     |                                    |                |          |                |          |            |     |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43280    | GROUP | 4:                                      | 1000 MG/KG/DAY                      | MALE | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 |
|-------------------|----------|-------|-----------------------------------------|-------------------------------------|------|----------------|----------|----------------|----------|------------|-----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS                                 | GROSS : DEPRESSED AREA (S)          | P    |                |          |                |          |            |     |
| BRAIN             | 1.95     | 0.326 | ONE, 1 MM IN DIAMETER, IN CORTEX, RIGHT |                                     |      |                |          |                |          |            |     |
| LIVER             | 17.86    | 2.987 | LIVER                                   | MICRO: INFILTRATION, SUBACUTE       | 1    |                |          |                |          |            |     |
| KIDNEYS           | 4.27     | 0.714 | LUNGS                                   | MICRO: INFILTRATION, GRANULOMATOUS  | 1    |                |          |                |          |            |     |
| HEART             | 1.79     | 0.299 | PROSTATE                                | MICRO: INFILTRATION, SUBACUTE       | 1    |                |          |                |          |            |     |
| SPLEEN            | 0.78     | 0.130 | THYROID GLANDS                          | MICRO: HYPERTROPHY, FOLLICULAR CELL | 1    |                |          |                |          |            |     |
| PROSTATE          | 1.07     | 0.179 | NO SIGNIFICANT                          |                                     |      |                |          |                |          |            |     |
| RT TESTIS         | 1.71     | 0.286 | CHANGES OBSERVED                        | GROSS: ADRENAL GLANDS               |      |                |          |                |          |            |     |
| LT TESTIS         | 1.75     | 0.293 |                                         | AORTA                               |      |                |          |                |          |            |     |
| RT EPIDIDYMIS     | 0.74     | 0.124 | CECUM                                   | COLON                               |      |                |          |                |          |            |     |
| LT EPIDIDYMIS     | 0.73     | 0.122 | EYES/OPTIC N.                           | HEART                               |      |                |          |                |          |            |     |
| RT CAUDA EPID     | 0.2703   | 0.045 | LYMPH NODE                              | ILEUM                               |      |                |          |                |          |            |     |
| LT CAUDA EPID     | 0.3037   | 0.051 | PANCREAS                                | LIVER                               |      |                |          |                |          |            |     |
| THYMUS GLAND      | 0.3340   | 0.056 | PITUITARY                               | LT EPIDIDYMIS                       |      |                |          |                |          |            |     |
| ADRENAL GLANDS    | 0.0598   | 0.010 | SKELETAL MUSCLE                         | PROSTATE                            |      |                |          |                |          |            |     |
| THYROIDS PARA     | 0.0214   | 0.004 | STOMACH                                 | SAL. GLAND MAND                     |      |                |          |                |          |            |     |
| FINAL BODY WT (G) | 598.     |       | RT TESTIS                               | SPINAL CORD                         |      |                |          |                |          |            |     |
|                   |          |       | URINARY BLADDER                         | STOMACH                             |      |                |          |                |          |            |     |
|                   |          |       |                                         | LYMPH NODE                          |      |                |          |                |          |            |     |
|                   |          |       |                                         | LT TESTIS                           |      |                |          |                |          |            |     |
|                   |          |       |                                         | LT TESTIS                           |      |                |          |                |          |            |     |
|                   |          |       |                                         | TRACHEA                             |      |                |          |                |          |            |     |
|                   |          |       |                                         | VAS DEFERENS                        |      |                |          |                |          |            |     |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43281    | GROUP | 4:               | 1000 MG/KG/DAY                                 | MALE                    | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 |
|-------------------|----------|-------|------------------|------------------------------------------------|-------------------------|----------------|----------|----------------|----------|------------|-----|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE                  | GROSS: DARK RED AREA(S) |                |          |                |          | GRADE      |     |
| BRAIN             | 2.18     | 0.425 | LUNGS            | MICRO: MULTIPLE, IRREGULARLY SHAPED, ALL LOBES |                         |                |          |                |          | 1          |     |
| LIVER             | 15.41    | 3.004 | LUNGS            | MICRO: MINERALIZATION, VASCULAR                |                         |                |          |                |          | P          |     |
| KIDNEYS           | 3.91     | 0.762 | LUNGS            | NO CORRELATE TO GROSS RED AREAS                |                         |                |          |                |          | 1          |     |
| HEART             | 1.60     | 0.312 |                  | HISTIOCYTOSIS, ALVEOLAR                        |                         |                |          |                |          | 1          |     |
| SPLEEN            | 0.77     | 0.150 |                  | MICRO: INFILTRATION, SUBACUTE                  |                         |                |          |                |          | 1          |     |
| PROSTATE          | 1.00     | 0.195 | PROSTATE         |                                                |                         |                |          |                |          |            |     |
| RT TESTIS         | 1.46     | 0.285 | NO SIGNIFICANT   |                                                |                         |                |          |                |          |            |     |
| LT TESTIS         | 1.46     | 0.285 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS                          | AORTA                   |                |          |                |          |            |     |
| RT EPIDIDYMIS     | 0.65     | 0.127 |                  | CECUM                                          | COLON                   |                |          |                |          |            |     |
| LT EPIDIDYMIS     | 0.72     | 0.140 |                  | EYES/OPTIC N.                                  | HEART                   |                |          |                |          |            |     |
| RT CAUDA EPID     | 0.3376   | 0.066 |                  | KIDNEYS                                        | LIVER                   |                |          |                |          |            |     |
| LT CAUDA EPID     | 0.3677   | 0.072 |                  | PANCREAS                                       | RT EPIDIDYMIS           |                |          |                |          |            |     |
| THYMUS GLAND      | 0.3296   | 0.064 |                  | PIITUITARY                                     | PROSTATE                |                |          |                |          |            |     |
| ADRENAL GLANDS    | 0.0782   | 0.015 |                  | SKELETAL MUSCLE                                | SKIN                    |                |          |                |          |            |     |
| THYROIDS/PARA     | 0.0331   | 0.006 |                  | STOMACH                                        | LYMPH NODE              |                |          |                |          |            |     |
| FINAL BODY WT (G) | 513.     |       |                  | RT TESTIS                                      | LT TESTIS               |                |          |                |          |            |     |
|                   |          |       |                  | URINARY BLADDER                                |                         |                |          |                |          |            |     |
|                   |          |       |                  | MICRO: THYROID GLANDS                          |                         |                |          |                |          |            |     |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43282    | GROUP | 4:                | 1000 MG/KG/DAY | MALE                            | SCHEDULED EUTH                                     | 08/23/00                            | DATE OF DEATH:    | 08/23/00         | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|-------------------|----------------|---------------------------------|----------------------------------------------------|-------------------------------------|-------------------|------------------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | KIDNEYS           |                | GROSS: DARK RED AREA (S)        | MULTIPLE, IRREGULARLY SHAPED, IN CORTEX, BILATERAL |                                     |                   |                  | P              |       |
| BRAIN             | 1.88     | 0.472 | LUNGS             |                | GROSS: WHITE AREA (S)           | MULTIPLE, IRREGULARLY SHAPED, ALL LOBES            |                                     |                   |                  | P              |       |
| LIVER             | 11.23    | 2.822 | LUNGS             |                | MICRO: MINERALIZATION, VASCULAR | INFILTRATION, GRANULOMATOUS                        |                                     |                   |                  | 1              |       |
| KIDNEYS           | 3.29     | 0.827 | HEART             | 1.25           | 0.314                           | LUNGS                                              | INFLAMMATION, GRANULOMATOUS         |                   |                  | 1              |       |
| HEART             |          |       | SPLEEN            | 0.66           | 0.166                           |                                                    | CORRELATES WITH GROSS WHITE AREAS   |                   |                  | 1              |       |
| SPLEEN            |          |       | PROSTATE          | 0.66           | 0.166                           |                                                    |                                     |                   |                  |                |       |
| PROSTATE          |          |       | RT TESTIS         | 1.70           | 0.427                           | THYROID GLANDS                                     | MICRO: HYPERTrophy, FOLLICULAR CELL |                   |                  |                |       |
| RT TESTIS         |          |       | LT TESTIS         | 1.64           | 0.412                           | NO SIGNIFICANT                                     |                                     |                   |                  |                |       |
| LT TESTIS         |          |       | RT EPIDIDYMIS     | 0.66           | 0.166                           | CHANGES OBSERVED                                   | GROSS: ADRENAL GLANDS               | AORTA             | STERNEBRAE       |                |       |
| RT EPIDIDYMIS     |          |       | LT EPIDIDYMIS     | 0.65           | 0.163                           |                                                    | CECUM                               | COLON             | DUODENUM         | ESOPHAGUS      |       |
| LT EPIDIDYMIS     |          |       | RT CAUDA EPID     | 0.2282         | 0.057                           |                                                    | EYES/OPTIC N.                       | HERT              | JEJUNUM          |                |       |
| RT CAUDA EPID     |          |       | LT CAUDA EPID     | 0.2886         | 0.073                           |                                                    | LIVER                               | LYMPH NODE        | ILEUM            |                |       |
| LT CAUDA EPID     |          |       | THYMUS GLAND      | 0.2606         | 0.065                           |                                                    | RT EPIDIDYMIS                       | LT EPIDIDYMIS     | MES              | NERVE, SCIATIC |       |
| THYMUS GLAND      |          |       | ADRENAL GLANDS    | 0.0456         | 0.011                           |                                                    | PROSTATE                            | SAL. GLAND MAND   | RECTUM           | PANCREAS       |       |
| ADRENAL GLANDS    |          |       | THYROIDS/PARA     | 0.0271         | 0.007                           |                                                    | SKIN                                | SPINAL CORD       | SEMINAL VESICLES | PITUITARY      |       |
| THYROIDS/PARA     |          |       | FINAL BODY WT (G) | 398.           |                                 |                                                    | LYMPH NODE,                         | MAND THYMUS GLAND | SKELETAL MUSCLE  | STOMACH        |       |
| FINAL BODY WT (G) |          |       |                   |                |                                 |                                                    | LT TESTIS                           | TRACHEA           | RT TESTIS        | RT TESTIS      |       |
|                   |          |       |                   |                |                                 |                                                    | MICRO: PROSTATE                     | VAS DEFERENS      | URINARY BLADDER  |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BERIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43405    | GROUP | 1:               | 0 MG/KG/DAY                   | FEMALE           | SCHEDULED EUTH | 08/23/00        | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|------------------|-------------------------------|------------------|----------------|-----------------|----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE |                  |                |                 |                |          |                |       |
| BRAIN             | 1.86     | 0.571 | NO SIGNIFICANT   | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE     |                 |                |          |                |       |
| LIVER             | 8.45     | 2.592 | CHANGES OBSERVED | BRAIN                         | CECUM            | COLON          | OVIDUCTS        | DUODENUM       |          |                |       |
| KIDNEYS           | 2.20     | 0.675 |                  | BSPHAGUS                      | EYES, OPTIC N.   | HEART          | ILEUM           |                |          |                |       |
| HEART             | 1.15     | 0.353 |                  | JEJUNUM                       | KIDNEYS          | LIVER          | LYMPH NODE, MES |                |          |                |       |
| SPLEEN            | 0.46     | 0.141 |                  | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |                |          |                |       |
| UTERUS/CX         | 0.51     | 0.156 |                  | PANCREAS                      | RECTUM           | PITUITARY      | SAL. GLAND MAND |                |          |                |       |
| OVARIES/OVIDUCTS  | 0.1338   | 0.041 |                  | SKELETAL MUSCLE               | SKIN             | SPINAL CORD    | SPLEEN          |                |          |                |       |
| THYMUS GLAND      | 0.3045   | 0.093 |                  | STOMACH                       | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |                |          |                |       |
| ADRENAL GLANDS    | 0.0633   | 0.019 |                  | URINARY BLADDER               | UTERUS           | VAGINA         |                 |                |          |                |       |
| THYROIDS/PARA     | 0.0170   | 0.005 |                  | CERVIX                        |                  |                |                 |                |          |                |       |
| FINAL BODY WT (G) | 326.     |       |                  | MICRO: LUNGS                  | THYROID GLANDS   |                |                 |                |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43409    | GROUP | 1:                                 | 0 MG/KG/DAY | FEMALE                          | SCHEDULED EUTH | 08/23/00        | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 | GRADE |
|-------------------|----------|-------|------------------------------------|-------------|---------------------------------|----------------|-----------------|----------------|----------|------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                              |             | MICRO: NECROSIS MULTIFOCAL      |                |                 |                |          |            |     | 2     |
| BRAIN             | 1.84     | 0.689 |                                    |             |                                 |                |                 |                |          |            |     |       |
| LIVER             | 8.26     | 3.094 |                                    |             |                                 |                |                 |                |          |            |     |       |
| KIDNEYS           | 1.80     | 0.674 | LUNGS                              |             | MICRO: INFLAMMATION, SUBACUTE   |                |                 |                |          |            |     | 1     |
| HEART             | 1.06     | 0.397 |                                    |             |                                 |                |                 |                |          |            |     | 1     |
| SPLEEN            | 0.45     | 0.169 | NO SIGNIFICANT<br>CHANGES OBSERVED |             | GROSS: MINERALIZATION, VASCULAR |                |                 |                |          |            |     |       |
| UTERUS/CX         | 0.97     | 0.363 |                                    |             |                                 |                |                 |                |          |            |     |       |
| OVARIES/OVIDUCTS  | 0.0820   | 0.031 | BRAIN                              |             | GROSS: ADRENAL GLANDS           | AORTA          | STERNEBRAE      |                |          |            |     |       |
| THYMUS GLAND      | 0.2119   | 0.079 |                                    |             |                                 | CECUM          | COLON           |                |          |            |     |       |
| ADRENAL GLANDS    | 0.0634   | 0.024 | ESOPHAGUS                          |             |                                 |                | DUODENUM        |                |          |            |     |       |
| THYROIDS/PARA     | 0.0170   | 0.006 | KIDNEYS                            |             |                                 |                | ILEUM           |                |          |            |     |       |
| FINAL BODY WT (G) | 267.     |       | LUNGS                              |             |                                 |                | LYMPH NODE      |                |          |            |     |       |
|                   |          |       | PANCREAS                           |             |                                 |                | OVARIES         |                |          |            |     |       |
|                   |          |       | SKELETAL MUSCLE                    |             |                                 |                | PITUITARY       |                |          |            |     |       |
|                   |          |       | STOMACH                            |             |                                 |                | SPINAL CORD     |                |          |            |     |       |
|                   |          |       | TRACHEA                            |             |                                 |                | SPLEEN          |                |          |            |     |       |
|                   |          |       | CERVIX                             |             |                                 |                | THYROID GLAND   |                |          |            |     |       |
|                   |          |       |                                    |             |                                 |                | URINARY BLADDER |                |          |            |     |       |
|                   |          |       |                                    |             |                                 |                | Vagina          |                |          |            |     |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
 MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, E-PRESENT

PROJECT NO. WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.           | 43423    | GROUP | 1:               | 0 MG/KG/DAY                     | FEMALE           | SCHEDULED EUTH | 08/23/00        | DATE OF DEATH: 08/23/00 | STUDY DAY: 119 | GRADE |
|----------------------|----------|-------|------------------|---------------------------------|------------------|----------------|-----------------|-------------------------|----------------|-------|
| ORGAN WEIGHT         | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE   |                  |                |                 |                         |                | 1     |
| BRAIN                | 1.88     | 0.699 | LUNGS            | MICRO: MINERALIZATION, VASCULAR |                  |                |                 |                         |                | 1     |
| LIVER                | 7.32     | 2.721 | NO SIGNIFICANT   |                                 |                  |                |                 |                         |                |       |
| KIDNEYS              | 1.78     | 0.662 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS           | AORTA            | STERNEBRAE     |                 |                         |                |       |
| HEART                | 0.95     | 0.353 |                  | BRAIN                           | CECUM            | COLON          | OVIDUCTS        |                         |                |       |
| SPLEEN               | 0.51     | 0.190 |                  | ESOPHAGUS                       | EYES/OPTIC N.    | HEART          | DUODENUM        |                         |                |       |
| UTERUS/CX            | 0.73     | 0.271 |                  | JEJUNUM                         | KIDNEY           | LIVER          | ILEUM           |                         |                |       |
| OVARIES/OVIDUCTS     | 0.1403   | 0.052 |                  | LUNGS                           | MAMMARY GLAND    | NERVE, SCIATIC | LYMPH NODE, MES |                         |                |       |
| THYMUS GLAND         | 0.2598   | 0.097 |                  | PANCREAS                        | RECTUM           | PITUITARY      | OVARIES         |                         |                |       |
| ADRENAL GLANDS       | 0.0772   | 0.029 |                  | SKELETAL MUSCLE                 | SKIN             | SPINAL CORD    | SAL. GLAND MAND |                         |                |       |
| THYROID GLANDS/ PARA | 0.0190   | 0.007 |                  | STOMACH                         | LYMPH NODE, MAND | THYMUS GLAND   | SPLEEN          |                         |                |       |
| FINAL BODY WT (G)    | 269.     |       |                  | TRACHEA                         | URINARY BLADDER  | UTERUS         | THYROID GLANDS  |                         |                |       |
|                      |          |       |                  | CERVIX                          |                  |                | VAGINA          |                         |                |       |
|                      |          |       |                  | MICRO: THYROID GLANDS           |                  |                |                 |                         |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB2D IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43400    | GROUP | 2 : 100 MG/KG/DAY | FEMALE                        | SCHEDULED EUTH   | 08/23/00       | DATE OF DEATH:  | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|-------------------|-------------------------------|------------------|----------------|-----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER             | MICRO: INFLAMMATION, SUBACUTE |                  |                |                 |          |                | 1     |
| BRAIN             | 1.98     | 0.633 | NO SIGNIFICANT    |                               |                  |                |                 |          |                |       |
| LIVER             | 8.12     | 2.594 | CHANGES OBSERVED  | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE     | OVIDUCTS        |          |                |       |
| KIDNEYS           | 1.94     | 0.620 |                   | BRAIN                         | CECUM            | COLON          | DUODENUM        |          |                |       |
| HEART             | 1.10     | 0.351 |                   | ESOPHAGUS                     | EYES/OPTIC N.    | HEART          | ILEUM           |          |                |       |
| SPLEEN            | 0.65     | 0.208 |                   | JETUNUM                       | KIDNEYS          | LIVER          | LYMPH NODE, MES |          |                |       |
| UTERUS/CX         | 0.79     | 0.252 |                   | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | OVARIES         |          |                |       |
| OVARIES/OVIDUCTS  | 0.1392   | 0.044 |                   | PANCREAS                      | RECTUM           | PITUITARY      | SAL. GLAND MAND |          |                |       |
| THYMUS GLAND      | 0.2743   | 0.088 |                   | SKELETAL MUSCLE               | SKIN             | SPINAL CORD    | SPLEEN          |          |                |       |
| ADRENAL GLANDS    | 0.0723   | 0.023 |                   | STOMACH                       | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLANDS  |          |                |       |
| THYROIDS/PARA     | 0.0224   | 0.007 |                   | TRACHEA                       | URINARY BLADDER  | UTERUS         | VAGINA          |          |                |       |
| FINAL BODY WT (G) | 313.     |       |                   | CERVIX                        |                  |                |                 |          |                |       |
|                   |          |       |                   | MICRO:LUNGS                   |                  |                |                 |          |                |       |
|                   |          |       |                   | THYROID GLANDS                |                  |                |                 |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43407    | GROUP | 2 :              | 100 MG/KG/DAY                 | FEMALE | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119   |
|-------------------|----------|-------|------------------|-------------------------------|--------|----------------|----------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFLAMMATION, SUBACUTE |        |                |          |                |          |            | GRADE |
| BRAIN             | 1.85     | 0.764 | SKIN             | GROSS: RED MATTING            |        |                |          |                |          |            | 1     |
| LIVER             | 7.41     | 3.062 |                  | OCULAR, LEFT                  |        |                |          |                |          |            | P     |
| KIDNEYS           | 1.95     | 0.806 | NO SIGNIFICANT   |                               |        |                |          |                |          |            |       |
| HEART             | 0.90     | 0.372 | CHANGES OBSERVED |                               |        |                |          |                |          |            |       |
| SPLLEEN           | 0.47     | 0.194 |                  |                               |        |                |          |                |          |            |       |
| UTERUS/CX         | 0.51     | 0.211 |                  |                               |        |                |          |                |          |            |       |
| OVARIES/OVIDUCTS  | 0.1275   | 0.053 |                  |                               |        |                |          |                |          |            |       |
| THYMUS GLAND      | 0.3024   | 0.125 |                  |                               |        |                |          |                |          |            |       |
| ADRENAL GLANDS    | 0.0615   | 0.025 |                  |                               |        |                |          |                |          |            |       |
| THYROID/ PARA     | 0.0204   | 0.008 |                  |                               |        |                |          |                |          |            |       |
| FINAL BODY WT (G) | 242.     |       |                  |                               |        |                |          |                |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43413    | GROUP | 2 : 100 MG/KG/DAY                  | FEMALE                | SCHEDULED EUTH   | 08/23/00   | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119  | GRADE |
|-------------------|----------|-------|------------------------------------|-----------------------|------------------|------------|----------------|----------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | NO SIGNIFICANT<br>CHANGES OBSERVED | GROSS: ADRENAL GLANDS | AORTA            | STERNEBRAE | OVIDUCTS       | OVIDUCTS | DUODENUM        |       |
| BRAIN             | 1.91     | 0.677 | 0.677                              | BRAIN                 | CECUM            |            | COLON          |          |                 |       |
| LIVER             | 7.02     | 2.489 | 0.582                              | ESOPHAGUS             | EYES/OPTIC N.    |            | HEART          |          | ILEUM           |       |
| KIDNEYS           | 1.64     | 0.582 |                                    | JEJUNUM               | KIDNEYS          |            | LIVER          |          | LYMPH NODE, MES |       |
| HEART             | 0.93     | 0.330 |                                    | LUNGS                 | MAMMARY GLAND    |            | NERVE, SCIATIC |          | OVARIES         |       |
| SPLIEN            | 0.46     | 0.163 |                                    | PANCREAS              | RECTUM           |            | PITUITARY      |          | SAL. GLAND MAND |       |
| UTERUS/CX         | 0.54     | 0.191 |                                    | SKELETAL MUSCLE       | SKIN             |            | SPINAL CORD    |          | SPLEEN          |       |
| OVARIES/OVIDUCTS  | 0.1381   | 0.049 |                                    | STOMACH               | LYMPH NODE, MAND |            | THYROID GLAND  |          | THYROID GLAND   |       |
| THYMUS GLAND      | 0.2863   | 0.102 |                                    | TRACHEA               | THYMUS GLAND     |            | VAGINA         |          | VAGINA          |       |
| ADRENAL GLANDS    | 0.0466   | 0.017 |                                    | CERVIX                | URINARY BLADDER  |            |                |          |                 |       |
| THYROIDS/PARA     | 0.0154   | 0.005 |                                    | MICRO:LIVER           | UTERUS           |            |                |          |                 |       |
| FINAL BODY WT (G) | 282.     |       |                                    |                       | LUNGS            |            | THYROID GLANDS |          |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43416    | GROUP | 2 :              | 100 MG/KG/DAY                 | FEMALE           | SCHEDULED EUTH | 08/23/00        | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119   |
|-------------------|----------|-------|------------------|-------------------------------|------------------|----------------|-----------------|----------------|----------|------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE |                  |                |                 |                |          |            | GRADE |
| BRAIN             | 1.90     | 0.662 | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL  |                  |                |                 |                |          |            | 1     |
| LIVER             | 7.22     | 2.516 | NO SIGNIFICANT   |                               |                  |                |                 |                |          |            | 1     |
| KIDNEYS           | 1.62     | 0.564 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS         | AORTA            | STERNEBRAE     |                 |                |          |            |       |
| HEART             | 1.05     | 0.366 |                  | BRAIN                         | CECUM            | COLON          | OVIDUCTS        |                |          |            |       |
| SPLEEN            | 0.54     | 0.188 |                  | ESOPHAGUS                     | EYES/OPTIC N.    | HEART          | DUODENUM        |                |          |            |       |
| UTERUS/CX         | 0.48     | 0.167 |                  | JEJUNUM                       | KIDNEYS          | LIVER          | ILEUM           |                |          |            |       |
| OVARIES/OVDUCTS   | 0.1362   | 0.047 |                  | LUNGS                         | MAMMARY GLAND    | NERVE, SCIATIC | LYMPH NODE, MES |                |          |            |       |
| THYMUS GLAND      | 0.2154   | 0.075 |                  | PANCREAS                      | RECTUM           | PITUITARY      | OVARIES         |                |          |            |       |
| ADRENAL GLANDS    | 0.0808   | 0.028 |                  | SKELETAL MUSCLE               | SKIN             | SPINAL CORD    | SAL. GLAND MAND |                |          |            |       |
| THYROIDS/PARA     | 0.0258   | 0.009 |                  | STOMACH                       | LYMPH NODE, MAND | SPLEEN         | SPLEEN          |                |          |            |       |
| FINAL BODY WT (G) | 287.     |       |                  | TRACHEA                       | URINARY BLADDER  | THYROID GLANDS | THYROID GLANDS  |                |          |            |       |
|                   |          |       |                  | CERVIX                        |                  | UTERUS         | VAGINA          |                |          |            |       |
|                   |          |       |                  | MICRO: LUNGS                  |                  |                |                 |                |          |            |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43419    | GROUP | 2: 100 MG/KG/DAY | FEMALE                       | SCHEDULED EUTH   | 08/23/00       | DATE OF DEATH:  | 08/23/00       | STUDY DAY: 119  | GRADE |
|-------------------|----------|-------|------------------|------------------------------|------------------|----------------|-----------------|----------------|-----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | THYROID GLANDS   | MICRO: CYST, ULTIMOBRANCHIAL |                  |                |                 |                |                 | 1     |
| BRAIN             | 1.89     | 0.791 | NO SIGNIFICANT   |                              |                  |                |                 |                |                 |       |
| LIVER             | 8.07     | 3.377 | CHANGES OBSERVED | GROSS: ADRENAL GLANDS        | AORTA            | CECUM          | STERNEBRAE      | COLUMN         | OVIDUCTS        |       |
| KIDNEYS           | 1.93     | 0.808 |                  | BRAIN                        | ESOPHAGUS        | EYES/OPTIC N.  | HEART           | DUODENUM       | DUODENUM        |       |
| HEART             | 0.96     | 0.402 |                  | JEJUNUM                      | KIDNEYS          | KIDNEY         | LIVER           | ILEUM          | LYMPH NODE, MES |       |
| SPLIEN            | 0.57     | 0.238 |                  | LUNGS                        | MAMMARY GLAND    | NERVE, SCIATIC | NERVE           | LIVER          | OVARIES         |       |
| UTERUS/CX         | 0.47     | 0.197 |                  | PANCREAS                     | RECTUM           | PITUITARY      | SAL. GLAND MAND | MAMM           | SAL. GLAND MAND |       |
| OVARIES/OVIDUCTS  | 0.1572   | 0.066 |                  | SKELLETAL MUSCLE             | SKIN             | SPINAL CORD    | SPLIEEN         | SPLEEN         | SPLEEN          |       |
| THYMUS GLAND      | 0.2257   | 0.094 |                  | STOMACH                      | LYMPH NODE, MAND | THYMUS GLAND   | THYROID GLAND   | THYROID GLANDS | THYROID GLANDS  |       |
| ADRENAL GLANDS    | 0.0555   | 0.023 |                  | TRACHEA                      | URINARY BLADDER  | UTERUS         | VAGINA          | VAGINA         | VAGINA          |       |
| THYROIDS/PARA     | 0 .0181  | 0.008 |                  | CERVIX                       | MICRO:LIVER      | LUNGS          |                 |                |                 |       |
| FINAL BODY WT (G) | 239.     |       |                  |                              |                  |                |                 |                |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43402    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                        | SCHEDULED EUTH            | 08/23/00 | DATE OF DEATH: | 08/23/00 | STUDY DAY: | 119 | GRADE |
|-------------------|----------|-------|-------------------|-------------------------------|---------------------------|----------|----------------|----------|------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  |                   | GENERAL COMMENT               | GROSS: MASS NOT CONFIRMED |          |                |          |            | P   |       |
| BRAIN             | 1.95     | 0.604 | KIDNEYS           |                               | GROSS: PALE               |          |                |          |            | P   |       |
| LIVER             | 11.54    | 3.573 | LIVER             |                               | RIGHT                     |          |                |          |            |     |       |
| KIDNEYS           | 2.65     | 0.820 |                   | MICRO: INFILTRATION, SUBACUTE |                           |          |                |          |            |     | 1     |
| HEART             | 1.29     | 0.399 | NO SIGNIFICANT    |                               |                           |          |                |          |            |     |       |
| SPLEEN            | 0.62     | 0.192 | CHANGES OBSERVED  |                               |                           |          |                |          |            |     |       |
| UTERUS/CX         | 0.77     | 0.238 | BRAIN             |                               | AORTA                     |          |                |          |            |     |       |
| OVARIES/OVIDUCTS  | 0.0938   | 0.029 | ESOPHAGUS         |                               | CECUM                     |          |                |          |            |     |       |
| THYMUS GLAND      | 0.2136   | 0.066 | JEJUNUM           |                               | EYES/OPTIC N.             |          |                |          |            |     |       |
| ADRENAL GLANDS    | 0.0871   | 0.027 | MAMMARY GLAND     |                               | LIVER                     |          |                |          |            |     |       |
| THYROIDS/PARA     | 0.0258   | 0.008 | RECTUM            |                               | NERVE, SCIATIC            |          |                |          |            |     |       |
| FINAL BODY WT (G) | 323.     |       | PITUITARY         |                               | OVARIES                   |          |                |          |            |     |       |
|                   |          |       | SKIN              |                               | SAL. GLAND MAND           |          |                |          |            |     |       |
|                   |          |       | LYMPH NODE, MAND  |                               | SPINAL CORD               |          |                |          |            |     |       |
|                   |          |       | URINARY BLADDER   |                               | THYMUS GLAND              |          |                |          |            |     |       |
|                   |          |       | UTERUS            |                               | LYMPH NODE, MAND          |          |                |          |            |     |       |
|                   |          |       |                   |                               | THYROID GLAND             |          |                |          |            |     |       |
|                   |          |       |                   |                               | VAGINA                    |          |                |          |            |     |       |
|                   |          |       |                   |                               | THYROID GLANDS            |          |                |          |            |     |       |
|                   |          |       |                   |                               | MICRO: LUNGS              |          |                |          |            |     |       |

GROSS GRADE CODE : 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE : 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43426    | GROUP | 3 : 300 MG/KG/DAY | FEMALE                       | SCHEDULED EUTH   | 08/23/00      | DATE OF DEATH: | 08/23/00        | STUDY DAY: | 119      | GRADE |
|-------------------|----------|-------|-------------------|------------------------------|------------------|---------------|----------------|-----------------|------------|----------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | THYROID GLANDS    | MICRO: CYST, UTERINOBANCHIAL |                  |               |                |                 |            |          | 1     |
| BRAIN             | 1.85     | 0.787 | NO SIGNIFICANT    | GROSS: ADRENAL GLANDS        | AORTA            | CECTUM        | STERNEBRAE     | COLUMN          | OVIDUCTS   | DUODENUM |       |
| LIVER             | 6.82     | 2.902 | CHANGES OBSERVED  | BRAIN                        | ESOPHAGUS        | EYES/OPTIC N. | HEART          | ILEUM           |            |          |       |
| KIDNEYS           | 1.75     | 0.745 |                   | JEJUNUM                      | KIDNEYS          | MAMMARY GLAND | LIVER          | LYMPH NODE, MES |            |          |       |
| HEART             | 0.85     | 0.362 |                   | LONGS                        | PANCREAS         | RECTUM        | NERVE, SCIATIC | OVARIES         |            |          |       |
| SPLIEN            | 0.39     | 0.166 |                   | PANCREAS                     | SKELETAL MUSCLE  | SKIN          | PITUITARY      | SAL. GLAND MAND |            |          |       |
| UTERUS/CX         | 0.61     | 0.260 |                   | STOMACH                      | LYMPH NODE, MAND | SPINAL CORD   |                | SPLIEN          |            |          |       |
| OVARIES/OVIDUCTS  | 0.1555   | 0.066 |                   | TRACHEA                      | URINARY BLADDER  | THYMUS GLAND  |                | THYROID GLANDS  |            |          |       |
| THYMUS GLAND      | 0.2244   | 0.095 |                   | CERVIX                       | MICRO:LIVER      | UTERUS        |                | VAGINA          |            |          |       |
| ADRENAL GLANDS    | 0.0769   | 0.033 |                   |                              |                  |               |                | LUNGS           |            |          |       |
| THYROIDS/PARA     | 0.0251   | 0.011 |                   |                              |                  |               |                |                 |            |          |       |
| FINAL BODY WT (G) | 235.     |       |                   |                              |                  |               |                |                 |            |          |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43442    | GROUP | 3: 300 MG/KG/DAY | FEMALE | SCHEDULED EUTH | 08/23/00 | DATE OF DEATH:                | 08/23/00         | STUDY DAY: | 119 | GRADE |
|-------------------|----------|-------|------------------|--------|----------------|----------|-------------------------------|------------------|------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            |        |                |          | MICRO: INFILTRATION, SUBACUTE |                  |            |     | 1     |
| BRAIN             | 2.03     | 0.712 | THYROID GLANDS   |        |                |          | MICRO: CYST, ULTIMOBRANCHIAL  |                  |            |     | 2     |
| LIVER             | 9.67     | 3.393 | NO SIGNIFICANT   |        |                |          | CHANGES OBSERVED              |                  |            |     |       |
| KIDNEYS           | 2.25     | 0.789 |                  |        |                |          | GROSS: ADRENAL GLANDS         | AORTA            |            |     |       |
| HEART             | 1.07     | 0.375 |                  |        |                |          | BRAIN                         | CECUM            |            |     |       |
| SPLIEN            | 0.60     | 0.211 |                  |        |                |          | ESOPHAGUS                     | EYES/OPTIC N.    |            |     |       |
| UTERUS/CX         | 0.73     | 0.256 |                  |        |                |          | JEJUNUM                       | HEART            |            |     |       |
| OVARIES/OVIDUCTS  | 0.1681   | 0.059 |                  |        |                |          | JUGLES                        | LIVER            |            |     |       |
| THYMUS GLAND      | 0.0886   | 0.031 |                  |        |                |          | PANCREAS                      | MAMMARY GLAND    |            |     |       |
| ADRENAL GLANDS    | 0.0527   | 0.018 |                  |        |                |          | RECTUM                        | NERVE, SCIATIC   |            |     |       |
| THYROIDS/ PARA    | 0.1218   | 0.008 |                  |        |                |          | SKELETAL MUSCLE               | PITUITARY        |            |     |       |
| FINAL BODY WT (G) | 285.     |       |                  |        |                |          | STOMACH                       | SPINAL CORD      |            |     |       |
|                   |          |       |                  |        |                |          | TRACHEA                       | LYMPH NODE, MAND |            |     |       |
|                   |          |       |                  |        |                |          | CERVIX                        | THYMUS GLAND     |            |     |       |
|                   |          |       |                  |        |                |          | MICRO: LUNGS                  | URINARY BLADDER  |            |     |       |
|                   |          |       |                  |        |                |          |                               | UTERUS           |            |     |       |
|                   |          |       |                  |        |                |          |                               | VAGINA           |            |     |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43446   | GROUP | 3 : 300 MG/KG/DAY | FEMALE | SCHEDULED EUTH                           | 08/23/00        | DATE OF DEATH:  | 08/23/00        | STUDY DAY: 119 | GRADE |
|-------------------|---------|-------|-------------------|--------|------------------------------------------|-----------------|-----------------|-----------------|----------------|-------|
| ORGAN WEIGHT      | ABS (G) | REL.  | LIVER             |        | GROSS: WHITE AREA (S)                    |                 |                 |                 |                | P     |
| BRAIN             | 1.78    | 0.784 |                   |        | ONE, 3 X 3 X 1 MM., CLEFT OF MEDIAN LOBE |                 |                 |                 |                |       |
| LIVER             | 7.27    | 3.203 | LIVER             |        | MICRO: INFILTRATION, SUBACUTE            |                 |                 |                 |                |       |
| KIDNEYS           | 1.90    | 0.837 |                   |        | CORRELATES TO GROSS WHITE AREA (S)       |                 |                 |                 |                | 1     |
| HEART             | 0.93    | 0.410 | NO SIGNIFICANT    |        |                                          |                 |                 |                 |                |       |
| SPLEEN            | 0.49    | 0.216 | CHANGES OBSERVED  |        | GROSS: ADRENAL GLANDS                    | AORTA           | STERNEBRAE      | OVIDUCTS        |                |       |
| UTERUS/CX         | 0.99    | 0.436 |                   |        | BRAIN                                    | CECUM           | COLON           | DUODENUM        |                |       |
| OVARIES/OVIDUCTS  | 0.1576  | 0.069 |                   |        | ESOPHAGUS                                | EYES/OPTIC N.   | HEART           | ILEUM           |                |       |
| THYMUS GLAND      | 0.1920  | 0.085 |                   |        | JEJUNUM                                  | KIDNEYS         | LYMPH NODE      | LUNGS           |                |       |
| ADRENAL GLANDS    | 0.0568  | 0.025 |                   |        | MAMMARY GLAND                            | NERVE, SCATATIC | OVARIES         | PANCREAS        |                |       |
| THYROID/PARA      | 0.0160  | 0.007 |                   |        | RECTUM                                   | PITUITARY       | SAL. GLAND MAND | SKELETAL MUSCLE |                |       |
| FINAL BODY WT (G) | 227.    |       |                   |        | SKIN                                     | SPINAL CORD     | SPLEEN          | STOMACH         |                |       |
|                   |         |       |                   |        | LYMPH NODE, MAND                         | THYMUS GLAND    | THYROID GLANDS  | TRACHEA         |                |       |
|                   |         |       |                   |        | URINARY BLADDER                          | UTERUS          | VAGINA          | CERVIX          |                |       |
|                   |         |       |                   |        | MICRO: LUNGS                             | THYROID GLANDS  |                 |                 |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43401    | GROUP | 4 : 1000 MG / KG / DAY | FEMALE                              | SCHEDULED EUTH   | 08/23/00       | DATE OF DEATH: | 08/23/00        | STUDY DAY:      | 119 | GRADE |
|-------------------|----------|-------|------------------------|-------------------------------------|------------------|----------------|----------------|-----------------|-----------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                  | MICRO: INFLAMMATION, SUBACUTE       |                  |                |                |                 | OVIDUCTS        |     |       |
| BRAIN             | 1.83     | 0.558 | LUNGS                  | MICRO: MINERALIZATION, VASCULAR     |                  |                |                |                 | DUODENUM        |     | 1     |
| LIVER             | 10.73    | 3.271 | THYROID GLANDS         | MICRO: INFLAMMATION, CHRONIC        |                  |                |                |                 | ILEUM           |     | 1     |
| KIDNEYS           | 2.57     | 0.784 | NO SIGNIFICANT         | MICRO: HYPERTROPHY, FOLLICULAR CELL |                  |                |                |                 | LYMPH NODE, MES |     | 1     |
| HEART             | 1.34     | 0.409 | CHANGES OBSERVED       | GROSS: ADRENAL GLANDS               | AORTA            | STERNEBRAE     |                | OVARIES         |                 |     | 1     |
| SPLEEN            | 0.51     | 0.155 |                        | BRAIN                               | CECUM            | COLON          |                | SAL. GLAND MAND |                 |     |       |
| UTERUS/CX         | 0.85     | 0.259 |                        | ESOPHAGUS                           | EYES/OPTIC N.    | HEART          |                | SPLEEN          |                 |     |       |
| OVARIES/OVIDUCTS  | 0.1107   | 0.034 |                        | JEJUNUM                             | KIDNEYS          | LIVER          |                | THYROID GLANDS  |                 |     |       |
| THYMUS GLAND      | 0.3533   | 0.108 |                        | LUNGS                               | MAMMARY GLAND    | NERVE, SCIATIC |                | URINARY BLADDER |                 |     |       |
| ADRENAL GLANDS    | 0.0825   | 0.025 |                        | PANCREAS                            | RECTUM           | PITUITARY      |                | CERVIX          |                 |     |       |
| THYROIDS/PARA     | 0.0228   | 0.007 |                        | SKELETAL MUSCLE                     | SKIN             | SPINAL CORD    |                |                 |                 |     |       |
| FINAL BODY WT (G) | 328.     |       |                        | STOMACH                             | LYMPH NODE, MAND | THYMUS GLAND   |                |                 |                 |     |       |
|                   |          |       |                        | TRACHEA                             | URINARY BLADDER  | UTERUS         |                |                 |                 |     |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, F-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43410    | GROUP | 4:               | 1000 MG/KG/DAY                      | FEMALE                | SCHEDULED EUTH   | 08/23/00       | DATE OF DEATH:  | 08/23/00 | STUDY DAY: | 119 | GRADE |
|-------------------|----------|-------|------------------|-------------------------------------|-----------------------|------------------|----------------|-----------------|----------|------------|-----|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER            | MICRO: INFILTRATION, SUBACUTE       |                       |                  |                |                 |          |            |     |       |
| BRAIN             | 1.79     | 0.775 | THYROID GLANDS   | MICRO: HYPERTROPHY, FOLLICULAR CELL |                       |                  |                |                 |          |            |     | 1     |
| LIVER             | 6.74     | 2.918 |                  | CYST, ULTIMOBRANCHIAL               |                       |                  |                |                 |          |            |     | 1     |
| KIDNEYS           | 1.61     | 0.697 | NO SIGNIFICANT   |                                     |                       |                  |                |                 |          |            |     | 1     |
| HEART             | 0.91     | 0.394 | CHANGES OBSERVED |                                     | GROSS: ADRENAL GLANDS | AORTA            |                |                 |          |            |     |       |
| SPLEEN            | 0.43     | 0.186 |                  |                                     | BRAIN                 | CECUM            | STERNEBRAE     | OVIDUCTS        |          |            |     |       |
| UTERUS/CX         | 0.58     | 0.251 |                  |                                     | ESOPHAGUS             | EYES/OPTIC N.    | COLON          | DUODENUM        |          |            |     |       |
| OVARIES/OVIDUCTS  | 0.1454   | 0.063 |                  |                                     | JEJUNUM               | KIDNEYS          | HEART          | ILEUM           |          |            |     |       |
| THYMUS GLAND      | 0.2443   | 0.106 |                  |                                     | LUNGS                 | MAMMARY GLAND    | LIVER          | LYMPH NODE, MES |          |            |     |       |
| ADRENAL GLANDS    | 0.0590   | 0.026 |                  |                                     | PANCREAS              | RECTUM           | NERVE, SCIATIC | OVARIES         |          |            |     |       |
| THYROIDS/PARA     | 0.0198   | 0.009 |                  |                                     | SKELLETAL MUSCLE      | SKIN             | PITUITARY      | SAL. GLAND MAND |          |            |     |       |
| FINAL BODY WT (G) | 231.     |       |                  |                                     | STOMACH               | LYMPH NODE, MAND | SPINAL CORD    | SPLEEN          |          |            |     |       |
|                   |          |       |                  |                                     | TRACHEA               | URINARY BLADDER  | THYMUS GLAND   | THYROID GLANDS  |          |            |     |       |
|                   |          |       |                  |                                     | CERVIX                | UTERUS           | VAGINA         |                 |          |            |     |       |
|                   |          |       |                  |                                     | MICRO: LUNGS          |                  |                |                 |          |            |     |       |

GROSS GRADE CODE: 1 - SLIGHT, 2 - MODERATE, 3 - MARKED, P - PRESENT  
MICRO GRADE CODE: 1 - MINIMAL, 2 - MILD, 3 - MODERATE, 4 - SEVERE, P - PRESENT

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43421  | GROUP    | 4: 1000 MG/KG/DAY | FEMALE    | SCHEDULED EUTH                                              | 08/23/00              | DATE OF DEATH:   | 08/23/00        | STUDY DAY: | 119 | GRADE |
|-------------------|--------|----------|-------------------|-----------|-------------------------------------------------------------|-----------------------|------------------|-----------------|------------|-----|-------|
| ORGAN WEIGHT      |        | ABS. (G) | REL.              | LIVER     | MICRO: VACUOLATION, HEPATOCELLULAR INFLAMMATION, SUBACUTE   |                       |                  |                 | OVIDUCTS   | 2   |       |
| BRAIN             | 1.90   | 0.640    |                   | LUNGS     | MICRO: INFLAMMATION, GRANULOMATOUS MINERALIZATION, VASCULAR |                       |                  | DUODENUM        | 1          |     |       |
| LIVER             | 9.71   | 3.269    |                   | KIDNEYS   |                                                             |                       |                  | ILEUM           | 1          |     |       |
| KIDNEYS           | 2.02   | 0.680    |                   | HEART     |                                                             |                       |                  | LYMPH NODE, MES | 1          |     |       |
| HEART             | 1.14   | 0.384    |                   | SPLEEN    | NO SIGNIFICANT CHANGES OBSERVED                             | GROSS: ADRENAL GLANDS | AORTA            | OVARIES         |            |     |       |
| SPLEEN            | 0.55   | 0.185    |                   | UTERUS/CX |                                                             |                       | CECUM            | SAL. GLAND MAND |            |     |       |
| UTERUS/CX         | 0.62   | 0.209    |                   |           |                                                             | BRAIN                 | EYES/OPTIC N.    | SPLEEN          |            |     |       |
|                   |        |          |                   |           |                                                             | ESOPHAGUS             | HEART            |                 |            |     |       |
| DIVARIES/OVIDUCTS | 0.1409 | 0.047    |                   |           |                                                             | JEJUNUM               | KIDNEYS          |                 |            |     |       |
| THYMUS GLAND      | 0.2077 | 0.070    |                   |           |                                                             | LUNGS                 | MAMMARY GLAND    |                 |            |     |       |
| ADRENAL GLANDS    | 0.0718 | 0.024    |                   |           |                                                             | PANCREAS              | RECTUM           |                 |            |     |       |
| THYROIDS/PARA     | 0.0237 | 0.008    |                   |           |                                                             | SKELETAL MUSCLE       | SKIN             |                 |            |     |       |
| FINAL BODY WT (G) | 297.   |          |                   |           |                                                             | STOMACH               | LIPID NODE, MAND | SPINAL CORD     |            |     |       |
|                   |        |          |                   |           |                                                             | TRACHEA               | THYMUS GLAND     | THYMUS GLAND    |            |     |       |
|                   |        |          |                   |           |                                                             | URINARY BLADDER       | UTERUS           | UTERUS          |            |     |       |
|                   |        |          |                   |           |                                                             | CERVIX                | VAGINA           | VAGINA          |            |     |       |

GROSS GRADE CODE : 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE : 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43429    | GROUP | 4:                              | 1000 MG/KG/DAY                      | FEMALE                        | SCHEDULED EUTH | 08/23/00        | DATE OF DEATH: | 08/23/00 | STUDY DAY: 119 | GRADE |
|-------------------|----------|-------|---------------------------------|-------------------------------------|-------------------------------|----------------|-----------------|----------------|----------|----------------|-------|
| ORGAN WEIGHT      | ABS. (G) | REL.  | LIVER                           |                                     | MICRO: INFILTRATION, SUBACUTE |                |                 |                |          |                |       |
| BRAIN             | 2.01     | 0.720 |                                 | VACUOLATION, HEPATOCELLULAR         |                               |                |                 |                |          |                | 1     |
| LIVER             | 9.53     | 3.416 | LUNGS                           | MICRO: INFILTRATION, GRANULOMATOUS  |                               |                |                 |                |          |                | 1     |
| KIDNEYS           | 2.08     | 0.746 | THYROID GLANDS                  | MICRO: HYPERTROPHY, FOLLICULAR CELL |                               |                |                 |                |          |                | 1     |
| HEART             | 1.18     | 0.423 | NO SIGNIFICANT CHANGES OBSERVED | GROSS: ADRENAL GLANDS               | AORTA                         | STERNEBRAE     | OVIDUCTS        |                |          |                |       |
| SPLEEN            | 0.56     | 0.201 |                                 | BRAIN                               | CCEUM                         | COLON          | DUODENUM        |                |          |                |       |
| UTERUS/CX         | 0.51     | 0.183 |                                 | ESOPHAGUS                           | EYES/OPTIC N.                 | HEART          | ILEUM           |                |          |                |       |
| OVARIES/OVIDUCTS  | 0.1536   | 0.055 |                                 | JEJUNUM                             | KIDNEYS                       | LIVER          | LYMPH NODE, MES |                |          |                |       |
| THYMUS GLAND      | 0.1520   | 0.054 |                                 | LUNGS                               | MAMMARY GLAND                 | NERVE, SCIATIC | OVARIES         |                |          |                |       |
| ADRENAL GLANDS    | 0.0670   | 0.024 |                                 | PANCREAS                            | RECTUM                        | PITUITARY      | SAL. GLAND MAND |                |          |                |       |
| THYROIDS/PARA     | 0.0207   | 0.007 |                                 | SKELLETAL MUSCLE                    | SKIN                          | SPINAL CORD    | SPLEEN          |                |          |                |       |
| FINAL BODY WT (G) | 279.     |       |                                 | STOMACH                             | LYMPH NODE, MAND              | THYMUS GLAND   | THYROID GLAND   |                |          |                |       |
|                   |          |       |                                 | TRACHEA                             | URINARY BLADDER               | UTERUS         | VAGINA          |                |          |                |       |
|                   |          |       |                                 | CERVIX                              |                               |                |                 |                |          |                |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 121 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL MACROSCOPIC AND MICROSCOPIC FINDINGS

| ANIMAL NO.        | 43430   | GROUP | 4:    | 1000 MG/KG/DAY   | FEMALE                        | SCHEDULED EUTH.  | 08/23/00       | DATE OF DEATH:  | 08/23/00         | STUDY DAY: 119  | GRADE |
|-------------------|---------|-------|-------|------------------|-------------------------------|------------------|----------------|-----------------|------------------|-----------------|-------|
| ORGAN WEIGHT      | ABS (G) | REL.  | LIVER | NO SIGNIFICANT   | MICRO: INFLAMMATION, SUBACUTE |                  |                |                 |                  |                 |       |
| BRAIN             | 1.88    | 0.674 |       |                  |                               |                  |                |                 |                  |                 |       |
| LIVER             | 8.90    | 3.190 |       | CHANGES OBSERVED | GROSS: ADRENAL GLANDS         | AORTA            | CECTUM         | STERNEBRAE      | COLON            | OVIDUCTS        |       |
| KIDNEYS           | 2.23    | 0.799 |       |                  | BRAIN                         | ESOPHAGUS        | EYES/OPTIC N.  | HEART           | DUODENUM         | ILEUM           |       |
| HEART             | 1.12    | 0.401 |       |                  |                               | JEJUNUM          | KIDNEYS        | LIVER           | LYMPH NODE, MES. | LYMPH NODE,     |       |
| SPLEEN            | 0.65    | 0.233 |       |                  |                               | LUNGS            | MAMMARY GLAND  | NERVE, SCIATIC  | OVARIES          | SAL. GLAND MAND |       |
| UTERUS/CX         | 1.04    | 0.373 |       |                  |                               | PANCREAS         | RECTUM         | PITUITARY       | SPLLEN           | SPINAL CORD     |       |
| OVARIES/OVIDUCTS  | 0.1545  | 0.055 |       |                  |                               | SKELLETAL MUSCLE | SKIN           | STOMACH         | THYROID GLAND    | THYROID GLANDS  |       |
| THYMUS GLAND      | 0.2441  | 0.087 |       |                  |                               |                  |                | URINARY BLADDER | UTERUS           | VAGINA          |       |
| ADRENAL GLANDS    | 0.0770  | 0.028 |       |                  |                               |                  |                |                 |                  |                 |       |
| THYROIDS/PARA     | 0.0250  | 0.009 |       |                  |                               |                  |                |                 |                  |                 |       |
| FINAL BODY WT (G) | 279.    |       |       |                  |                               |                  |                |                 |                  |                 |       |
|                   |         |       |       |                  | MICRO:LUNGS                   |                  | THYROID GLANDS |                 |                  |                 |       |

GROSS GRADE CODE: 1-SLIGHT, 2-MODERATE, 3-MARKED, P-PRESENT  
MICRO GRADE CODE: 1-MINIMAL, 2-MILD, 3-MODERATE, 4-SEVERE, P-PRESENT

PGRHv4.28  
12/11/2001

## **FINAL REPORT**

Volume 4 of 4  
(Individual Tables 122-137 and Appendices A-L)

### **STUDY TITLE**

#### **A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

### **STUDY DIRECTOR**

Christopher P. Chengelis, Ph.D., D.A.B.T.

### **STUDY INITIATED ON**

March 2, 2000

### **STUDY COMPLETION DATE**

December 14, 2001

### **PERFORMING LABORATORY**

WIL Research Laboratories, Inc.  
1407 George Road  
Ashland, Ohio 44805-9281

### **LABORATORY STUDY NUMBER**

WIL-186012

### **SPONSOR**

Chemical Manufacturers Association  
Brominated Flame Retardant Industry Panel (BFRIP)  
1300 Wilson Blvd.  
Arlington, VA 22209

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | BRAIN | LIVER | KID   | NEY'S | HEART | SPLEEN | PROSTATE | TESTIS | RT | MALE GROUP: 0 MG/KG/DAY |      |
|--------|---------|-------|-------|-------|-------|-------|--------|----------|--------|----|-------------------------|------|
|        |         |       |       |       |       |       |        |          |        |    | MEAN                    | S.D. |
| 43332  | 540.    | 1.96  | 14.03 | 4.30  | 1.59  | 0.67  | 0.93   | 1.67     |        |    |                         |      |
|        | 530.    | 2.14  | 14.34 | 3.39  | 1.78  | 1.01  | 1.00   |          |        |    |                         |      |
| 43334  | 462.    | 2.19  | 12.11 | 3.24  | 1.58  | 0.67  | 0.90   |          |        |    |                         |      |
| 43336  | 542.    | 2.06  | 15.56 | 4.06  | 1.88  | 0.78  | 1.06   |          |        |    |                         |      |
| 43339  | 542.    | 2.15  | 13.77 | 3.22  | 1.58  | 0.90  | 1.17   |          |        |    |                         |      |
| 43349  | 492.    | 1.88  | 12.85 | 3.20  | 1.44  | 0.60  | 0.54   |          |        |    |                         |      |
| 43365  | 607.    | 1.97  | 16.13 | 3.39  | 1.72  | 0.98  | 1.12   |          |        |    |                         |      |
| 43368  | 519.    | 2.09  | 14.68 | 3.34  | 1.47  | 0.85  | 0.94   |          |        |    |                         |      |
| 43369  | 533.    | 2.04  | 14.94 | 3.34  | 1.63  | 0.69  | 1.08   |          |        |    |                         |      |
| 43379  | 522.    | 1.99  | 14.87 | 3.52  | 1.66  | 0.91  | 0.78   |          |        |    |                         |      |
|        |         |       |       |       |       |       |        |          |        |    |                         |      |
| MEAN   | 529.    | 2.05  | 14.33 | 3.50  | 1.63  | 0.81  | 0.95   |          |        |    |                         |      |
| S.D.   | 37.3    | 0.098 | 1.205 | 0.375 | 0.134 | 0.144 | 0.185  |          |        |    |                         |      |
| N      | 10      | 10    | 10    | 10    | 10    | 10    | 10     |          |        |    |                         |      |

FBW = FINAL BODY WEIGHT

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

|        |         | MALE GROUP: 100 MG/KG/DAY |       |       |      |       |        |          |           |  |  |
|--------|---------|---------------------------|-------|-------|------|-------|--------|----------|-----------|--|--|
| ANIMAL | FBW (G) | BRAIN                     | LIVER | KID   | NEYS | HEART | SPLEEN | PROSTATE | RT TESTIS |  |  |
| 43342  | 526.    | 2.10                      | 14.65 | 3.88  |      | 1.66  | 0.72   | 1.00     | 1.67      |  |  |
| 43350  | 566.    | 2.06                      | 17.45 | 3.33  |      | 1.67  | 0.76   | 0.91     | 1.68      |  |  |
| 43351  | 511.    | 2.07                      | 15.29 | 3.41  |      | 1.51  | 0.74   | 1.03     | 1.54      |  |  |
| 43354  | 472.    | 2.03                      | 15.99 | 3.28  |      | 1.56  | 0.94   | 1.00     | 1.75      |  |  |
| 43364  | 512.    | 1.95                      | 16.63 | 3.49  |      | 1.60  | 0.65   | 1.04     | 1.17      |  |  |
| 43371  | 547.    | 2.07                      | 18.70 | 3.95  |      | 1.58  | 0.63   | 1.07     | 1.64      |  |  |
| 43380  | 561.    | 2.08                      | 17.69 | 3.26  |      | 1.56  | 0.77   | 0.64     | 1.69      |  |  |
| 43382  | 534.    | 2.05                      | 15.98 | 3.62  |      | 1.50  | 0.63   | 0.85     | 1.86      |  |  |
| 43384  | 636.    | 2.18                      | 22.53 | 4.20  |      | 1.72  | 1.00   | 1.51     | 1.67      |  |  |
| 43386  | 482.    | 2.10                      | 15.17 | 3.40  |      | 1.37  | 0.73   | 0.86     | 1.58      |  |  |
| MEAN   | 535.    | 2.07                      | 17.01 | 3.58  |      | 1.57  | 0.76   | 0.99     | 1.63      |  |  |
| S.D.   | 47.1    | 0.058                     | 2.313 | 0.323 |      | 0.100 | 0.124  | 0.223    | 0.182     |  |  |
| N      | 10      | 10                        | 10    | 10    |      | 10    | 10     | 10       | 10        |  |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

|        |         | MALE GROUP: 300 MG/KG/DAY |       |        |       |        |          |       |           |       |  |
|--------|---------|---------------------------|-------|--------|-------|--------|----------|-------|-----------|-------|--|
| ANIMAL | FBW (G) | BRAIN                     | LIVER | KIDNEY | HEART | SPLEEN | PROSTATE | TATE  | RT TESTIS |       |  |
| 43323  | 431.    | 2.06                      | 13.37 | 3.28   | 1.30  | 0.71   | 1.08     | 1.48  | 1.07      | 1.55  |  |
| 43331  | 537.    | 1.97                      | 16.47 | 3.52   | 1.70  | 0.70   | 1.48     | 1.62  | 1.24      | 1.69  |  |
| 43341  | 536.    | 1.93                      | 15.41 | 3.49   | 1.81  | 0.62   | 0.62     | 1.57  | 1.21      | 1.93  |  |
| 43355  | 564.    | 2.00                      | 18.91 | 3.62   | 1.68  | 0.66   | 1.24     | 1.24  | 1.21      | 1.57  |  |
| 43361  | 641.    | 2.17                      | 23.79 | 4.67   | 1.71  | 0.90   | 1.51     | 1.51  | 0.70      | 1.69  |  |
| 43363  | 496.    | 2.01                      | 14.91 | 3.24   | 1.51  | 0.37   | 0.70     | 0.70  | 1.41      | 1.41  |  |
| 43383  | 520.    | 1.97                      | 16.01 | 3.38   | 1.67  | 0.80   | 0.96     | 0.96  | 1.13      | 1.80  |  |
| 43385  | 546.    | 1.96                      | 16.34 | 3.14   | 1.60  | 0.74   | 1.47     | 1.47  | 1.11      | 1.66  |  |
| 43388  | 582.    | 2.14                      | 20.59 | 4.26   | 1.76  | 0.92   | 1.24     | 1.24  | 1.11      | 1.65  |  |
| 43392  | 513.    | 2.02                      | 15.91 | 3.54   | 1.45  | 0.79   |          |       |           |       |  |
| MEAN   | 537.    | 2.02                      | 17.17 | 3.61   | 1.62  | 0.72   | 1.12     | 1.12  | 1.04      | 1.64  |  |
| S.D.   | 55.2    | 0.079                     | 3.079 | 0.482  | 0.156 | 0.157  | 0.153    | 0.153 | 0.10      | 0.153 |  |
| N      | 10      | 10                        | 10    | 10     | 10    | 10     | 10       | 10    | 10        | 10    |  |

FBW = FINAL BODY WEIGHT

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | BRAIN | LIVER | KIDNEY | HEART | SPLEEN | PROSTATE |                       | RT TESTIS |
|--------|---------|-------|-------|--------|-------|--------|----------|-----------------------|-----------|
|        |         |       |       |        |       |        | MALE     | GROUP: 1000 MG/KG/DAY |           |
| 43297  | 516.    | 2.00  | 20.27 | 3.47   | 1.54  | 0.76   | 1.11     | 1.48                  |           |
| 43325  | 457.    | 2.03  | 17.29 | 3.04   | 1.46  | 0.68   | 0.90     | 1.39                  |           |
| 43328  | 505.    | 1.99  | 19.30 | 3.76   | 1.58  | 0.73   | 1.56     | 1.78                  |           |
| 43346  | 432.    | 1.94  | 16.75 | 2.99   | 1.26  | 0.59   | 1.07     | 1.82                  |           |
| 43362  | 495.    | 2.01  | 18.38 | 3.22   | 1.34  | 0.83   | 1.18     | 1.62                  |           |
| 43372  | 595.    | 2.13  | 24.94 | 3.57   | 1.66  | 0.80   | 1.46     | 1.60                  |           |
| 43373  | 422.    | 1.95  | 15.35 | 3.18   | 1.34  | 0.65   | 1.22     | 1.18                  |           |
| 43377  | 473.    | 2.02  | 18.35 | 3.57   | 1.40  | 0.75   | 1.57     | 1.71                  |           |
| 43397  | 531.    | 1.87  | 20.51 | 3.58   | 1.72  | 1.03   | 1.19     | 1.60                  |           |
| MEAN   | 492.    | 1.99  | 19.02 | 3.38   | 1.48  | 0.76   | 1.25     | 1.58                  |           |
| S.D.   | 53.6    | 0.072 | 2.770 | 0.273  | 0.157 | 0.126  | 0.231    | 0.201                 |           |
| N      | 9       | 9     | 9     | 9      | 9     | 9      | 9        | 9                     |           |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 0 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|-------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS          | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43332  | 1.80   | 0.64                    | 0.70           | 0.3239              | 0.3261              | 0.2885       | 0.0531         |
| 43334  | 1.69   | 0.72                    | 0.70           | 0.2919              | 0.3338              | 0.3474       | 0.0611         |
| 43336  | 1.77   | 0.76                    | 0.71           | 0.3033              | 0.2652              | 0.3706       | 0.0463         |
| 43339  | 1.63   | 0.61                    | 0.70           | 0.2868              | 0.3018              | 0.3390       | 0.0766         |
| 43349  | 1.60   | 0.68                    | 0.67           | 0.2538              | 0.3056              | 0.3275       | 0.0578         |
| 43365  | 0.53   | 0.10                    | 0.30           | 0.1047              | 0.1216              | 0.2151       | 0.0215         |
| 43368  | 1.69   | 0.72                    | 0.69           | 0.3268              | 0.3562              | 0.3374       | 0.0526         |
| 43369  | 1.54   | 0.70                    | 0.53           | 0.2843              | 0.2564              | 0.2230       | 0.0534         |
| 43379  | 1.94   | 0.82                    | 0.66           | 0.3798              | 0.2956              | 0.3212       | 0.0461         |
| 43391  | 1.76   | 0.71                    | 0.65           | 0.3087              | 0.2779              | 0.2339       | 0.0636         |
| MEAN   | 1.60   | 0.65                    | 0.63           | 0.2864              | 0.2840              | 0.3104       | 0.0556         |
| S.D.   | 0.391  | 0.201                   | 0.128          | 0.07200             | 0.06490             | 0.05002      | 0.00963        |
| N      | 10     | 10                      | 10             | 10                  | 10                  | 10           | 10             |

PAGE 5  
WEEK 13

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 100 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS            | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43342  | 1.59   | 0.71                      | 0.67           | 0.3081              | 0.2779              | 0.3675       | 0.0597         |
| 43350  | 1.79   | 0.70                      | 0.75           | 0.2618              | 0.3267              | 0.3185       | 0.0565         |
| 43351  | 1.58   | 0.66                      | 0.65           | 0.2477              | 0.2773              | 0.2458       | 0.0581         |
| 43354  | 1.77   | 0.72                      | 0.73           | 0.3194              | 0.3291              | 0.2582       | 0.0510         |
| 43364  | 1.34   | 0.63                      | 0.57           | 0.2760              | 0.2661              | 0.2435       | 0.0637         |
| 43371  | 1.63   | 0.70                      | 0.67           | 0.2939              | 0.2888              | 0.4153       | 0.0632         |
| 43380  | 1.76   | 0.73                      | 0.69           | 0.3300              | 0.3279              | 0.2859       | 0.0613         |
| 43382  | 1.90   | 0.71                      | 0.76           | 0.2990              | 0.3319              | 0.2613       | 0.0545         |
| 43384  | 1.69   | 0.75                      | 0.74           | 0.3498              | 0.3307              | 0.2875       | 0.0633         |
| 43386  | 1.58   | 0.70                      | 0.69           | 0.3322              | 0.3283              | 0.3654       | 0.0543         |
| MEAN   | 1.66   | 0.70                      | 0.69           | 0.3018              | 0.3085              | 0.3049       | 0.0586         |
| S.D.   | 0.156  | 0.034                     | 0.057          | 0.0322              | 0.02720             | 0.05959      | 0.00442        |
| N      | 10     | 10                        | 10             | 10                  | 10                  | 10           | 10             |

PROJECT NO. :WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | LT<br>TESTIS | RT<br>EPI<br>DIDYMIS | LT EPI<br>DIDYMIS | RT CAUDA<br>EPIDIDYMIS | LT CAUDA<br>EPIDIDYMIS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROID<br>/ PARA<br>THYROID |
|--------|--------|--------------|----------------------|-------------------|------------------------|------------------------|-----------------|-------------------|------------------------------|
|        |        |              |                      |                   |                        |                        |                 |                   |                              |
| 43323  |        | 1.57         | 0.53                 | 0.59              | 0.2434                 | 0.2419                 | 0.2237          | 0.0445            | 0.0370                       |
| 43331  |        | 1.58         | 0.78                 | 0.82              | 0.3887                 | 0.3310                 | 0.2640          | 0.0421            | 0.0259                       |
| 43341  |        | 1.95         | 0.67                 | 0.73              | 0.2922                 | 0.3445                 | 0.2883          | 0.0474            | 0.0233                       |
| 43355  |        | 1.55         | 0.62                 | 0.59              | 0.2959                 | 0.2905                 | 0.3818          | 0.0715            | 0.0266                       |
| 43361  |        | 1.73         | 0.70                 | 0.61              | 0.3457                 | 0.2725                 | 0.2167          | 0.0552            | 0.0338                       |
| 43363  |        | 1.42         | 0.66                 | 0.53              | 0.3000                 | 0.2180                 | 0.3906          | 0.0448            | 0.0183                       |
| 43383  |        | 1.75         | 0.74                 | 0.70              | 0.2956                 | 0.3312                 | 0.2845          | 0.0586            | 0.0306                       |
| 43385  |        | 1.52         | 0.63                 | 0.57              | 0.2703                 | 0.2955                 | 0.2163          | 0.0537            | 0.0199                       |
| 43388  |        | 1.70         | 0.70                 | 0.81              | 0.2761                 | 0.3593                 | 0.2762          | 0.0637            | 0.0251                       |
| 43392  |        | 1.65         | 0.68                 | 0.67              | 0.3056                 | 0.2827                 | 0.2779          | 0.0549            | 0.0194                       |
| MEAN   |        | 1.64         | 0.67                 | 0.66              | 0.3014                 | 0.2967                 | 0.2820          | 0.0536            | 0.0260                       |
| S.D.   |        | 0.149        | 0.069                | 0.101             | 0.04045                | 0.04545                | 0.06160         | 0.00933           | 0.00625                      |
| N      |        | 10           | 10                   | 10                | 10                     | 10                     | 10              | 10                | 10                           |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | LT   | RT EPI<br>DIDYMIS | LT EPI<br>DIDYMIS | RT CAUDA<br>EPIDIDYMIS | LT CAUDA<br>EPIDIDYMIS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/ PARA | MALE GROUP: 1000 MG/KG/DAY |  |
|--------|--------|------|-------------------|-------------------|------------------------|------------------------|-----------------|-------------------|--------------------|----------------------------|--|
|        |        |      |                   |                   |                        |                        |                 |                   |                    | 1000 MG/KG/DAY             |  |
| 43297  |        | 1.60 | 0.59              | 0.62              | 0.2637                 | 0.2853                 | 0.1827          | 0.0589            | 0.0204             |                            |  |
| 43325  |        | 1.42 | 0.63              | 0.61              | 0.2629                 | 0.2607                 | 0.2119          | 0.0517            | 0.0276             |                            |  |
| 43328  |        | 1.76 | 0.72              | 0.70              | 0.3545                 | 0.2964                 | 0.2816          | 0.0673            | 0.0272             |                            |  |
| 43346  |        | 1.81 | 0.73              | 0.72              | 0.3219                 | 0.3342                 | 0.2125          | 0.0480            | 0.0219             |                            |  |
| 43362  |        | 1.61 | 0.65              | 0.69              | 0.2517                 | 0.3203                 | 0.2943          | 0.0558            | 0.0286             |                            |  |
| 43372  |        | 1.63 | 0.75              | 0.72              | 0.3181                 | 0.3336                 | 0.3051          | 0.0643            | 0.0160             |                            |  |
| 43373  |        | 1.21 | 0.72              | 0.58              | 0.3745                 | 0.2589                 | 0.2913          | 0.0554            | 0.0159             |                            |  |
| 43377  |        | 1.57 | 0.67              | 0.62              | 0.2509                 | 0.2710                 | 0.2617          | 0.0467            | 0.0315             |                            |  |
| 43397  |        | 1.64 | 0.75              | 0.70              | 0.3593                 | 0.3147                 | 0.2877          | 0.0563            | 0.0214             |                            |  |
| MEAN   | 1.58   |      | 0.69              | 0.66              | 0.3064                 | 0.2972                 | 0.2588          | 0.0560            | 0.0234             |                            |  |
| S.D.   | 0.179  |      | 0.057             | 0.054             | 0.04989                | 0.02992                | 0.04466         | 0.00684           | 0.00560            |                            |  |
| N      | 9      |      | 9                 | 9                 | 9                      | 9                      | 9               | 9                 | 9                  |                            |  |

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| FEMALE GROUP: 0 MG/KG/DAY |         |       |       |       |       |        |                 |                      |                 |
|---------------------------|---------|-------|-------|-------|-------|--------|-----------------|----------------------|-----------------|
| ANIMAL                    | FBW (G) | BRAIN | LIVER | KID   | HEART | SPLEEN | UTERUS<br>US/CX | OVARIES/<br>OVIDUCTS | THYMUS<br>GLAND |
|                           |         | NEY'S | NEY'S | NEY'S | NEY'S | NEY'S  | NEY'S           | NEY'S                | NEY'S           |
| 43433                     | 290.    | 1.82  | 8.79  | 2.15  | 1.21  | 0.46   | 0.77            | 0.1393               | 0.2537          |
| 43435                     | 315.    | 2.01  | 8.72  | 2.25  | 1.00  | 0.58   | 1.23            | 0.1510               | 0.3599          |
| 43436                     | 299.    | 1.87  | 8.54  | 2.27  | 1.24  | 0.63   | 0.84            | 0.1664               | 0.2525          |
| 43438                     | 278.    | 1.77  | 6.88  | 1.90  | 1.05  | 0.48   | 0.92            | 0.1358               | 0.2968          |
| 43449                     | 260.    | 1.86  | 6.99  | 1.79  | 0.85  | 0.43   | 0.85            | 0.1266               | 0.1879          |
| 43467                     | 294.    | 2.01  | 8.95  | 2.67  | 1.09  | 0.63   | 0.58            | 0.1519               | 0.3199          |
| 43474                     | 229.    | 1.68  | 6.68  | 1.87  | 0.90  | 0.44   | 0.43            | 0.1192               | 0.1848          |
| 43483                     | 265.    | 1.90  | 8.17  | 1.95  | 1.07  | 0.39   | 0.57            | 0.1369               | 0.2017          |
| 43497                     | 287.    | 1.85  | 8.19  | 2.02  | 1.07  | 0.56   | 1.13            | 0.2050               | 0.1640          |
| 43501                     | 295.    | 1.80  | 9.31  | 2.04  | 1.48  | 0.49   | 0.76            | 0.1033               | 0.2699          |
| MEAN                      | 281.    | 1.86  | 8.12  | 2.09  | 1.10  | 0.51   | 0.81            | 0.1435               | 0.2491          |
| S.D.                      | 24.4    | 0.101 | 0.942 | 0.258 | 0.180 | 0.085  | 0.248           | 0.02798              | 0.06446         |
| N                         | 10      | 10    | 10    | 10    | 10    | 10     | 10              | 10                   | 10              |

FBW = FINAL BODY WEIGHT

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 100 MG/KG/DAY

| ANIMAL | FBW (G) | BRAIN | LIVER | KID   | NEYS  | HEART | SPLEEN | UTER    | OVARIES /<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/ PARA |
|--------|---------|-------|-------|-------|-------|-------|--------|---------|-----------------------|-----------------|-------------------|--------------------|
|        |         |       |       |       |       |       |        |         |                       |                 |                   |                    |
| 43420  | 260.    | 1.77  | 11.03 | 2.17  | 0.95  | 0.48  | 0.72   | 0.1087  | 0.2884                | 0.0744          | 0.0152            |                    |
| 43439  | 266.    | 1.91  | 8.83  | 1.67  | 0.83  | 0.42  | 0.46   | 0.1366  | 0.2537                | 0.0599          | 0.0233            |                    |
| 43458  | 236.    | 1.83  | 8.33  | 1.72  | 1.03  | 0.40  | 0.55   | 0.1351  | 0.2855                | 0.0642          | 0.0163            |                    |
| 43462  | 228.    | 1.75  | 8.05  | 1.71  | 0.89  | 0.47  | 0.44   | 0.1167  | 0.3171                | 0.0562          | 0.0173            |                    |
| 43468  | 294.    | 1.90  | 10.25 | 2.22  | 1.24  | 0.56  | 0.60   | 0.0897  | 0.3005                | 0.0671          | 0.0290            |                    |
| 43486  | 297.    | 1.88  | 10.76 | 2.00  | 1.10  | 0.47  | 0.77   | 0.1600  | 0.2391                | 0.0783          | 0.0167            |                    |
| 43489  | 295.    | 1.88  | 10.30 | 2.15  | 1.20  | 0.57  | 0.86   | 0.1483  | 0.2228                | 0.0843          | 0.0190            |                    |
| 43502  | 274.    | 1.80  | 9.51  | 1.88  | 1.12  | 0.49  | 0.51   | 0.1101  | 0.2149                | 0.0851          | 0.0258            |                    |
| 43511  | 304.    | 1.85  | 10.07 | 2.21  | 1.07  | 0.52  | 0.55   | 0.1760  | 0.3339                | 0.0765          | 0.0167            |                    |
| 43515  | 316.    | 1.81  | 12.09 | 2.14  | 1.16  | 0.54  | 0.89   | 0.1161  | 0.2867                | 0.0749          | 0.0165            |                    |
| MEAN   | 277.    | 1.84  | 9.92  | 1.99  | 1.06  | 0.49  | 0.64   | 0.1297  | 0.2743                | 0.0721          | 0.0196            |                    |
| S.D.   | 29.4    | 0.055 | 1.261 | 0.223 | 0.134 | 0.056 | 0.164  | 0.02638 | 0.03999               | 0.00988         | 0.00475           |                    |
| N      | 10      |       | 10    | 10    | 10    |       | 10     | 10      | 10                    | 10              | 10                |                    |

FBW = FINAL BODY WEIGHT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 300 MG/KG/DAY

| ANIMAL | FBW (G) | BRAIN | LIVER | KID   | HEART | SPLEEN | UTER  | OVARIES /<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/ PARA |
|--------|---------|-------|-------|-------|-------|--------|-------|-----------------------|-----------------|-------------------|--------------------|
|        |         | NEYS  | NEYS  | NEYS  | US/CX | US/CX  | US/CX | US/CX                 | US/CX           | US/CX             | US/CX              |
| 43463  | 246.    | 1.69  | 8.85  | 1.77  | 0.85  | 0.47   | 0.45  | 0.1287                | 0.1072          | 0.0641            | 0.0164             |
| 43475  | 308.    | 1.90  | 9.56  | 1.90  | 1.06  | 0.51   | 0.58  | 0.1351                | 0.2178          | 0.0544            | 0.0160             |
| 43478  | 359.    | 1.93  | 12.82 | 2.06  | 1.16  | 0.56   | 0.60  | 0.0935                | 0.3124          | 0.0693            | 0.0149             |
| 43491  | 308.    | 1.73  | 9.52  | 1.98  | 1.05  | 0.40   | 0.86  | 0.1311                | 0.2712          | 0.0840            | 0.0178             |
| 43495  | 273.    | 1.96  | 10.93 | 1.93  | 1.05  | 0.41   | 0.68  | 0.1223                | 0.2317          | 0.0814            | 0.0181             |
| 43496  | 316.    | 1.90  | 12.38 | 2.53  | 1.28  | 0.82   | 0.83  | 0.1046                | 0.2451          | 0.0877            | 0.0207             |
| 43508  | 276.    | 1.88  | 10.48 | 2.04  | 1.02  | 0.59   | 0.57  | 0.1644                | 0.2768          | 0.0826            | 0.0231             |
| 43513  | 300.    | 1.96  | 9.96  | 2.05  | 1.21  | 0.72   | 0.58  | 0.1929                | 0.4368          | 0.0781            | 0.0201             |
| 43516  | 304.    | 1.77  | 12.11 | 2.46  | 1.05  | 0.47   | 0.86  | 0.1065                | 0.3539          | 0.0818            | 0.0176             |
| 43517  | 276.    | 1.90  | 9.36  | 1.99  | 1.04  | 0.62   | 0.64  | 0.1228                | 0.2483          | 0.0694            | 0.0171             |
| MEAN   | 297.    | 1.86  | 10.60 | 2.07  | 1.08  | 0.56   | 0.67  | 0.1302                | 0.2701          | 0.0753            | 0.0182             |
| S.D.   | 30.8    | 0.097 | 1.405 | 0.240 | 0.118 | 0.135  | 0.141 | 0.02946               | 0.08724         | 0.01056           | 0.00246            |
| N      | 10      | 10    | 10    | 10    | 10    | 10     | 10    | 10                    | 10              | 10                | 10                 |

FBW = FINAL BODY WEIGHT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 122 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | FEMALE GROUP: 1000 MG/KG/DAY |       |       |       |       |        |         |                    |              |                |
|--------|---------|------------------------------|-------|-------|-------|-------|--------|---------|--------------------|--------------|----------------|
|        |         | BRAIN                        | LIVER | KID   | NEYS  | HEART | SPLEEN | UTER    | OVARIES / OVIDUCTS | THYMUS GLAND | ADRENAL GLANDS |
| 43440  | 268.    | 1.77                         | 11.81 | 1.97  | 0.96  | 0.37  | 0.41   | 0.1382  | 0.2648             | 0.0722       | 0.0217         |
| 43456  | 370.    | 1.78                         | 15.03 | 2.25  | 1.32  | 0.65  | 0.55   | 0.1301  | 0.2686             | 0.0794       | 0.0199         |
| 43460  | 234.    | 1.91                         | 9.86  | 1.73  | 1.02  | 0.48  | 0.56   | 0.1442  | 0.1375             | 0.0833       | 0.0166         |
| 43466  | 333.    | 1.82                         | 14.43 | 2.35  | 1.21  | 0.57  | 0.51   | 0.1650  | 0.2219             | 0.0652       | 0.0246         |
| 43477  | 270.    | 1.87                         | 11.83 | 2.13  | 1.01  | 0.78  | 0.77   | 0.1224  | 0.2561             | 0.0686       | 0.0157         |
| 43479  | 274.    | 1.86                         | 12.84 | 2.27  | 0.96  | 0.43  | 0.87   | 0.1817  | 0.2173             | 0.0617       | 0.0127         |
| 43481  | 342.    | 1.92                         | 13.92 | 2.29  | 1.19  | 0.47  | 0.79   | 0.1469  | 0.2510             | 0.0655       | 0.0198         |
| 43484  | 286.    | 1.90                         | 11.38 | 1.85  | 1.06  | 0.52  | 0.43   | 0.1290  | 0.1611             | 0.0451       | 0.0196         |
| 43492  | 252.    | 1.83                         | 12.28 | 1.96  | 1.05  | 0.59  | 0.51   | 0.1706  | 0.1830             | 0.0827       | 0.0236         |
| 43503  | 262.    | 1.66                         | 10.84 | 1.71  | 0.91  | 0.39  | 0.81   | 0.1500  | 0.2959             | 0.0743       | 0.0231         |
| MEAN   | 289.    | 1.83                         | 12.42 | 2.05  | 1.07  | 0.53  | 0.62   | 0.1478  | 0.2257             | 0.0698       | 0.0197         |
| S.D.   | 44.1    | 0.080                        | 1.638 | 0.239 | 0.130 | 0.126 | 0.171  | 0.01940 | 0.05134            | 0.01147      | 0.00379        |
| N      | 10      | 10                           | 10    | 10    | 10    | 10    | 10     | 10      | 10                 | 10           | 10             |

FBW = FINAL BODY WEIGHT

POFBWv4.05  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | BRAIN | LIVER | KIDNEY | HEART | SPLEEN | PROSTATE | TESTIS | PAGE 1<br>WEEK 17 |  |
|--------|---------|-------|-------|--------|-------|--------|----------|--------|-------------------|--|
|        |         |       |       |        |       |        |          |        |                   |  |
| 43289  | 561.    | 1.99  | 15.04 | 3.61   | 1.84  | 0.62   | 1.03     | 1.73   |                   |  |
| 43295  | 574.    | 1.98  | 15.58 | 4.06   | 1.61  | 0.65   | 1.29     | 1.70   |                   |  |
| 43308  | 554.    | 1.91  | 14.92 | 3.53   | 1.69  | 0.69   | 1.49     | 1.42   |                   |  |
| 43316  | 511.    | 2.17  | 13.22 | 3.30   | 1.46  | 0.70   | 0.99     | 1.74   |                   |  |
| 43326  | 509.    | 1.80  | 13.17 | 2.80   | 1.61  | 0.56   | 1.27     | 1.54   |                   |  |
| MEAN   | 542.    | 1.97  | 14.39 | 3.46   | 1.64  | 0.64   | 1.21     | 1.63   |                   |  |
| S.D.   | 29.9    | 0.135 | 1.115 | 0.461  | 0.138 | 0.057  | 0.206    | 0.141  |                   |  |
| N      | 5       | 5     | 5     | 5      | 5     | 5      | 5        | 5      |                   |  |

FBW = FINAL BODY WEIGHT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | BRAIN | LIVER | KIDNEY | HEART | SPLEEN | PROSTATE | TESTIS | MALE GROUP: 100 MG/KG/DAY |    |
|--------|---------|-------|-------|--------|-------|--------|----------|--------|---------------------------|----|
|        |         |       |       |        |       |        |          |        | RT                        | RT |
| 43285  | 601.    | 2.11  | 17.35 | 3.87   | 1.72  | 0.78   | 0.68     | 1.70   |                           |    |
| 43293  | 571.    | 2.13  | 17.06 | 4.35   | 1.80  | 0.79   | 0.89     | 1.53   |                           |    |
| 43311  | 475.    | 2.14  | 14.10 | 3.55   | 1.56  | 0.83   | 0.93     | 1.68   |                           |    |
| 43320  | 473.    | 1.95  | 13.09 | 3.54   | 1.47  | 0.68   | 1.00     | 1.42   |                           |    |
| 43340  | 377.    | 2.01  | 12.00 | 2.86   | 1.47  | 0.65   | 0.74     | 0.20   |                           |    |
| MEAN   | 499.    | 2.07  | 14.72 | 3.63   | 1.60  | 0.75   | 0.85     | 1.31   |                           |    |
| S.D.   | 89.1    | 0.084 | 2.389 | 0.544  | 0.150 | 0.077  | 0.134    | 0.629  |                           |    |
| N      | 5       | 5     | 5     | 5      | 5     | 5      | 5        | 5      |                           |    |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | BRAIN | LIVER | KID   | NEYS  | HEART | SPLEEN | PROSTATE | TESTIS | MALE GROUP: 300 MG/KG/DAY |    |
|--------|---------|-------|-------|-------|-------|-------|--------|----------|--------|---------------------------|----|
|        |         |       |       |       |       |       |        |          |        | RT                        | RT |
| 43290  | 475.    | 2.01  | 13.03 | 3.32  | 1.46  | 0.70  | 0.50   | 1.47     |        |                           |    |
| 43307  | 540.    | 2.02  | 16.69 | 4.19  | 1.70  | 0.70  | 1.20   | 1.59     |        |                           |    |
| 43309  | 601.    | 2.05  | 17.85 | 4.75  | 1.84  | 0.90  | 1.25   | 1.91     |        |                           |    |
| 43318  | 583.    | 1.99  | 16.16 | 4.00  | 1.79  | 0.91  | 1.39   | 1.56     |        |                           |    |
| 43322  | 488.    | 2.18  | 14.58 | 3.47  | 1.62  | 0.86  | 0.99   | 1.67     |        |                           |    |
| MEAN   | 537.    | 2.05  | 15.66 | 3.95  | 1.68  | 0.81  | 1.07   | 1.64     |        |                           |    |
| S.D.   | 55.8    | 0.076 | 1.884 | 0.576 | 0.150 | 0.106 | 0.347  | 0.167    |        |                           |    |
| N      | 5       | 5     | 5     | 5     | 5     | 5     | 5      | 5        |        |                           |    |

FBW = FINAL BODY WEIGHT

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 1000 MG/KG/DAY |       |        |       |        |
|--------|---------|----------------------------|-------|--------|-------|--------|
|        |         | BRAIN                      | LIVER | KIDNEY | HEART | SPLEEN |
| 43277  | 493.    | 1.92                       | 13.53 | 3.24   | 1.54  | 0.54   |
| 43278  | 479.    | 1.91                       | 12.42 | 3.38   | 1.74  | 0.53   |
| 43280  | 598.    | 1.95                       | 17.86 | 4.27   | 1.79  | 0.78   |
| 43281  | 513.    | 2.18                       | 15.41 | 3.91   | 1.60  | 0.77   |
| 43282  | 398.    | 1.88                       | 11.23 | 3.29   | 1.25  | 0.66   |
| MEAN   | 496.    | 1.97                       | 14.09 | 3.62   | 1.58  | 0.66   |
| S.D.   | 71.8    | 0.121                      | 2.609 | 0.452  | 0.212 | 0.120  |
| N      | 5       | 5                          | 5     | 5      | 5     | 5      |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 0 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|-------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS          | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43289  | 1.71   | 0.75                    | 0.78           | 0.3544              | 0.3636              | 0.2074       | 0.0540         |
| 43295  | 1.71   | 0.74                    | 0.72           | 0.3007              | 0.3127              | 0.3309       | 0.0636         |
| 43308  | 1.35   | 0.74                    | 0.71           | 0.3278              | 0.3340              | 0.2840       | 0.0569         |
| 43316  | 1.65   | 0.71                    | 0.73           | 0.2863              | 0.2963              | 0.4229       | 0.0823         |
| 43326  | 1.40   | 0.62                    | 0.53           | 0.2418              | 0.2355              | 0.2999       | 0.0714         |
| MEAN   | 1.56   | 0.71                    | 0.69           | 0.3022              | 0.3084              | 0.3090       | 0.0656         |
| S.D.   | 0.175  | 0.054                   | 0.096          | 0.04267             | 0.04791             | 0.0724       | 0.01148        |
| N      | 5      | 5                       | 5              | 5                   | 5                   | 5            | 5              |

PAGE 5  
WEEK 17

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL                               | TESTIS | MALE GROUP: 100 MG/KG/DAY |                |                     |                     |              |                |
|--------------------------------------|--------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|                                      |        | LT EPI DIDYMIS            | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43285                                | 1.76   | 0.73                      | 0.74           | 0.3264              | 0.3583              | 0.2941       | 0.0686         |
| 43293                                | 1.58   | 0.72                      | 0.81           | 0.3224              | 0.4092              | 0.2672       | 0.0609         |
| 43311                                | 1.69   | 0.83                      | 0.77           | 0.3558              | 0.3440              | 0.2363       | 0.0688         |
| 43320                                | 1.42   | 0.60                      | 0.62           | 0.2486              | 0.2944              | 0.1383       | 0.0526         |
| 43340                                | 1.04   | 0.06                      | 0.53           | NA                  | 0.2047              | 0.1939       | 0.0716         |
| MEAN                                 | 1.50   | 0.59                      | 0.69           | 0.3133              | 0.3221              | 0.2260       | 0.0645         |
| S.D.                                 | 0.286  | 0.306                     | 0.116          | 0.04563             | 0.07734             | 0.06157      | 0.00775        |
| N                                    | 5      | 5                         | 5              | 5                   | 5                   | 5            | 5              |
| NA = ORGAN NOT POSITIVELY IDENTIFIED |        |                           |                |                     |                     |              |                |

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 300 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS            | RT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43290  | 1.52   | 0.69                      | 0.69           | 0.2832              | 0.3178              | 0.2907       | 0.0650         |
| 43307  | 1.62   | 0.66                      | 0.70           | 0.2854              | 0.3102              | 0.3679       | 0.0536         |
| 43309  | 1.98   | 0.84                      | 0.80           | 0.1189              | 0.4033              | 0.3740       | 0.0560         |
| 43318  | 1.52   | 0.74                      | 0.62           | 0.2968              | 0.2614              | 0.1868       | 0.0485         |
| 43322  | 1.64   | 0.73                      | 0.78           | 0.3295              | 0.3805              | 0.2866       | 0.0613         |
| MEAN   | 1.66   | 0.73                      | 0.72           | 0.3244              | 0.3346              | 0.3012       | 0.0569         |
| S.D.   | 0.189  | 0.068                     | 0.073          | 0.0551              | 0.05715             | 0.07609      | 0.00647        |
| N      | 5      | 5                         | 5              | 5                   | 5                   | 5            | 5              |

PAGE 7  
 WEEK 17

PROJECT NO. : WIL-1886012  
SPONSOR : CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| ANIMAL | TESTIS | LT<br>TESTIS | MALE GROUP: 1000 MG/KG/DAY |                   |            |                        |                        |                 |
|--------|--------|--------------|----------------------------|-------------------|------------|------------------------|------------------------|-----------------|
|        |        |              | RT EPI<br>DIDYMIS          | LT EPI<br>DIDYMIS | EPIDIDYMIS | RT CAUDA<br>EPIDIDYMIS | LT CAUDA<br>EPIDIDYMIS | THYMUS<br>GLAND | ADRENAL GLANDS | THYROIDS / PARA |
| 43277  | 1.56   | 0.70         | 0.69                       | 0.3075            | 0.2863     | 0.2603                 | 0.0419                 | 0.0338          |
| 43278  | 1.45   | 0.72         | 0.67                       | 0.2935            | 0.2933     | 0.1742                 | 0.0467                 | 0.0247          |
| 43280  | 1.75   | 0.74         | 0.73                       | 0.2703            | 0.3037     | 0.3340                 | 0.0598                 | 0.0214          |
| 43281  | 1.46   | 0.65         | 0.72                       | 0.3376            | 0.3677     | 0.3296                 | 0.0782                 | 0.0331          |
| 43282  | 1.64   | 0.66         | 0.65                       | 0.2282            | 0.2886     | 0.2606                 | 0.0456                 | 0.0271          |
| MEAN   | 1.57   | 0.69         | 0.69                       | 0.2874            | 0.3079     | 0.2717                 | 0.0544                 | 0.0280          |
| S.D.   | 0.126  | 0.038        | 0.033                      | 0.04110           | 0.03408    | 0.06518                | 0.01490                | 0.00536         |
| N      | 5      | 5            | 5                          | 5                 | 5          | 5                      | 5                      | 5               |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| FEMALE GROUP: 0 MG/KG/DAY |         |       |       |        |       |        |            |                  |              |
|---------------------------|---------|-------|-------|--------|-------|--------|------------|------------------|--------------|
| ANIMAL                    | FBW (G) | BRAIN | LIVER | KIDNEY | HEART | SPLEEN | UTERUS/CVX | OVARIES/OVIDUCTS | THYMUS GLAND |
|                           |         |       |       |        |       |        |            |                  |              |
| 43398                     | 243.    | 1.86  | 7.19  | 1.99   | 0.84  | 0.48   | 1.22       | 0.1195           | 0.3175       |
| 43405                     | 326.    | 1.86  | 8.45  | 2.20   | 1.15  | 0.46   | 0.51       | 0.1338           | 0.3045       |
| 43409                     | 267.    | 1.84  | 8.26  | 1.80   | 1.06  | 0.45   | 0.97       | 0.0820           | 0.2119       |
| 43423                     | 269.    | 1.88  | 7.32  | 1.78   | 0.95  | 0.51   | 0.73       | 0.1403           | 0.2598       |
| 43432                     | 301.    | 1.98  | 9.25  | 2.04   | 1.24  | 0.50   | 0.45       | 0.1484           | 0.2153       |
| MEAN                      | 281.    | 1.88  | 8.09  | 1.96   | 1.05  | 0.48   | 0.78       | 0.1248           | 0.2618       |
| S.D.                      | 32.4    | 0.055 | 0.852 | 0.175  | 0.158 | 0.025  | 0.322      | 0.02616          | 0.04894      |
| N                         | 5       | 5     | 5     | 5      | 5     | 5      | 5          | 5                | 5            |

FBW = FINAL BODY WEIGHT

PAGE 9  
WEEK 17

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 100 MG/KG/DAY

| ANIMAL | FBW (G) | KIDNEY |       |        | HEART |        |       | SPLEEN  |          |              | UTERUS / OVIDUCTS |                |  | THYMUS GLAND |  |  | ADRENAL GLANDS |  |  | THYROID / PARA |  |  |
|--------|---------|--------|-------|--------|-------|--------|-------|---------|----------|--------------|-------------------|----------------|--|--------------|--|--|----------------|--|--|----------------|--|--|
|        |         | BRAIN  | LIVER | KIDNEY | HEART | SPLEEN | US/CX | UTERUS  | OVIDUCTS | THYMUS GLAND | ADRENAL GLANDS    | THYROID / PARA |  |              |  |  |                |  |  |                |  |  |
| 43400  | 313.    | 1.98   | 8.12  | 1.94   | 1.10  | 0.65   | 0.79  | 0.1392  | 0.2743   | 0.0723       | 0.0224            |                |  |              |  |  |                |  |  |                |  |  |
| 43407  | 242.    | 1.85   | 7.41  | 1.95   | 0.90  | 0.47   | 0.51  | 0.1275  | 0.3024   | 0.0615       | 0.0204            |                |  |              |  |  |                |  |  |                |  |  |
| 43413  | 282.    | 1.91   | 7.02  | 1.64   | 0.93  | 0.46   | 0.54  | 0.1381  | 0.2863   | 0.0466       | 0.0154            |                |  |              |  |  |                |  |  |                |  |  |
| 43416  | 287.    | 1.90   | 7.22  | 1.62   | 1.05  | 0.54   | 0.48  | 0.1362  | 0.2154   | 0.0808       | 0.0258            |                |  |              |  |  |                |  |  |                |  |  |
| 43419  | 239.    | 1.89   | 8.07  | 1.93   | 0.96  | 0.57   | 0.47  | 0.1572  | 0.2257   | 0.0555       | 0.0181            |                |  |              |  |  |                |  |  |                |  |  |
| MEAN   | 273.    | 1.91   | 7.57  | 1.82   | 0.99  | 0.54   | 0.56  | 0.1396  | 0.2608   | 0.0633       | 0.0204            |                |  |              |  |  |                |  |  |                |  |  |
| S.D.   | 31.6    | 0.047  | 0.501 | 0.170  | 0.084 | 0.078  | 0.133 | 0.01084 | 0.03826  | 0.01351      | 0.00398           |                |  |              |  |  |                |  |  |                |  |  |
| N      | 5       | 5      | 5     | 5      | 5     | 5      | 5     | 5       | 5        | 5            | 5                 |                |  |              |  |  |                |  |  |                |  |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

FEMALE GROUP: 300 MG/KG/DAY

| ANIMAL | FBW (G) | BRAIN | LIVER | KID   | HEART | SPLEEN | UTER  | OVARIES /<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/ PARA<br>THYROID |
|--------|---------|-------|-------|-------|-------|--------|-------|-----------------------|-----------------|-------------------|-------------------------------|
|        |         | NEYS  |       |       | US/CX | US/CX  |       |                       |                 |                   |                               |
| 43402  | 323.    | 1.95  | 11.54 | 2.65  | 1.29  | 0.62   | 0.77  | 0.0938                | 0.2136          | 0.0871            | 0.0258                        |
| 43426  | 235.    | 1.85  | 6.82  | 1.75  | 0.85  | 0.39   | 0.61  | 0.1555                | 0.2244          | 0.0769            | 0.0251                        |
| 43442  | 285.    | 2.03  | 9.67  | 2.25  | 1.07  | 0.60   | 0.73  | 0.1681                | 0.0886          | 0.0527            | 0.0218                        |
| 43446  | 227.    | 1.78  | 7.27  | 1.90  | 0.93  | 0.49   | 0.99  | 0.1576                | 0.1920          | 0.0568            | 0.0160                        |
| 43461  | 295.    | 1.82  | 8.78  | 2.02  | 1.07  | 0.67   | 0.56  | 0.1345                | 0.2099          | 0.0766            | 0.0223                        |
| MEAN   | 273.    | 1.89  | 8.82  | 2.11  | 1.04  | 0.55   | 0.73  | 0.1419                | 0.1857          | 0.0700            | 0.0222                        |
| S.D.   | 40.9    | 0.102 | 1.906 | 0.351 | 0.168 | 0.113  | 0.168 | 0.02952               | 0.05552         | 0.01464           | 0.00387                       |
| N      | 5       | 5     | 5     | 5     | 5     | 5      | 5     | 5                     | 5               | 5                 | 5                             |

FBW = FINAL BODY WEIGHT

PROJECT NO :WIL-106012  
SPONSOR :CMA-BFRIP

TABLE 123 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS AND FINAL BODY WEIGHTS (GRAMS)

| FEMALE GROUP: 1000 MG/KG/DAY |         |       |       |       |       |       |        |         |                       |                   |                   |
|------------------------------|---------|-------|-------|-------|-------|-------|--------|---------|-----------------------|-------------------|-------------------|
| ANIMAL                       | FBW (G) | BRAIN | LIVER | KID   | NEYS  | HEART | SPLEEN | UTER    | OVARIES /<br>OVIDUCTS |                   |                   |
|                              |         |       |       |       |       |       |        | US/CX   | THYMUS<br>GLAND       | ADRENAL<br>GLANDS | THYROIDS<br>/PARA |
| 43401                        | 328.    | 1.83  | 10.73 | 2.57  | 1.34  | 0.51  | 0.85   | 0.1107  | 0.3533                | 0.0825            | 0.0228            |
| 43410                        | 231.    | 1.79  | 6.74  | 1.61  | 0.91  | 0.43  | 0.58   | 0.1454  | 0.2443                | 0.0590            | 0.0198            |
| 43421                        | 297.    | 1.90  | 9.71  | 2.02  | 1.14  | 0.55  | 0.62   | 0.1409  | 0.2077                | 0.0718            | 0.0237            |
| 43429                        | 279.    | 2.01  | 9.53  | 2.08  | 1.18  | 0.56  | 0.51   | 0.1536  | 0.1520                | 0.0670            | 0.0207            |
| 43430                        | 279.    | 1.88  | 8.90  | 2.23  | 1.12  | 0.65  | 1.04   | 0.1545  | 0.2441                | 0.0770            | 0.0250            |
| MEAN                         | 283.    | 1.88  | 9.12  | 2.10  | 1.14  | 0.54  | 0.72   | 0.1410  | 0.2403                | 0.0715            | 0.0224            |
| S.D.                         | 35.2    | 0.083 | 1.485 | 0.348 | 0.154 | 0.080 | 0.220  | 0.01788 | 0.07359               | 0.00905           | 0.00214           |
| N                            | 5       | 5     | 5     | 5     | 5     | 5     | 5      | 5       | 5                     | 5                 | 5                 |

FBW = FINAL BODY WEIGHT

POFBWv4.05  
11/17/2000  
R:07/18/2001

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 0 MG/KG/DAY |        | PROSTATE |        | RT TESTIS |          |
|--------|---------|-------------------------|--------|----------|--------|-----------|----------|
|        |         | BRAIN                   | LIVER  | KIDNEY   | HEART  | SPLEEN    | PROSTATE |
| 43332  | 540.    | 0.363                   | 2.598  | 0.796    | 0.294  | 0.124     | 0.172    |
| 43334  | 530.    | 0.404                   | 2.706  | 0.640    | 0.336  | 0.191     | 0.189    |
| 43336  | 462.    | 0.474                   | 2.621  | 0.701    | 0.342  | 0.145     | 0.195    |
| 43339  | 542.    | 0.380                   | 2.871  | 0.749    | 0.347  | 0.144     | 0.196    |
| 43349  | 541.    | 0.397                   | 2.545  | 0.595    | 0.292  | 0.166     | 0.216    |
| 43365  | 492.    | 0.382                   | 2.612  | 0.650    | 0.293  | 0.122     | 0.110    |
| 43368  | 607.    | 0.325                   | 2.657  | 0.558    | 0.283  | 0.161     | 0.185    |
| 43369  | 519.    | 0.403                   | 2.829  | 0.644    | 0.283  | 0.164     | 0.181    |
| 43379  | 533.    | 0.383                   | 2.803  | 0.627    | 0.306  | 0.129     | 0.203    |
| 43391  | 522.    | 0.381                   | 2.849  | 0.674    | 0.318  | 0.174     | 0.149    |
| MEAN   | 529.    | 0.389                   | 2.709  | 0.663    | 0.309  | 0.152     | 0.180    |
| S.D.   | 37.3    | 0.0376                  | 0.1193 | 0.0704   | 0.0247 | 0.0230    | 0.0304   |
| N      | 10      |                         | 10     | 10       | 10     | 10        | 10       |

FBW = FINAL BODY WEIGHT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 100 MG/KG/DAY |        |        |        |        |          |
|--------|---------|---------------------------|--------|--------|--------|--------|----------|
|        |         | BRAIN                     | LIVER  | KIDNEY | HEART  | SPLEEN | PROSTATE |
| 43342  | 526.    | 0.399                     | 2.785  | 0.738  | 0.316  | 0.137  | 0.190    |
| 43350  | 566.    | 0.364                     | 3.083  | 0.588  | 0.295  | 0.134  | 0.161    |
| 43351  | 511.    | 0.405                     | 2.992  | 0.667  | 0.295  | 0.145  | 0.202    |
| 43354  | 472.    | 0.430                     | 3.388  | 0.695  | 0.331  | 0.199  | 0.212    |
| 43364  | 512.    | 0.381                     | 3.248  | 0.682  | 0.313  | 0.127  | 0.203    |
| 43371  | 547.    | 0.378                     | 3.419  | 0.722  | 0.289  | 0.115  | 0.196    |
| 43380  | 561.    | 0.371                     | 3.153  | 0.581  | 0.278  | 0.137  | 0.114    |
| 43382  | 534.    | 0.384                     | 2.993  | 0.678  | 0.281  | 0.118  | 0.159    |
| 43384  | 636.    | 0.343                     | 3.542  | 0.660  | 0.270  | 0.157  | 0.237    |
| 43386  | 482.    | 0.436                     | 3.147  | 0.705  | 0.284  | 0.151  | 0.178    |
| MEAN   | 535.    | 0.389                     | 3.175  | 0.672  | 0.295  | 0.142  | 0.185    |
| S.D.   | 47.1    | 0.0289                    | 0.2293 | 0.0518 | 0.0192 | 0.0241 | 0.0342   |
| N      | 10      |                           | 10     | 10     | 10     | 10     | 10       |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 300 MG/KG/DAY |        | PROSTATE |        | RT TESTIS |
|--------|---------|---------------------------|--------|----------|--------|-----------|
|        |         | BRAIN                     | LIVER  | KIDNEY   | HEART  |           |
| 43323  | 431.    | 0.478                     | 3.102  | 0.761    | 0.302  | 0.251     |
| 43331  | 537.    | 0.367                     | 3.067  | 0.655    | 0.317  | 0.276     |
| 43341  | 536.    | 0.360                     | 2.875  | 0.651    | 0.338  | 0.130     |
| 43355  | 564.    | 0.355                     | 3.353  | 0.642    | 0.298  | 0.116     |
| 43361  | 641.    | 0.339                     | 3.711  | 0.729    | 0.267  | 0.117     |
| 43363  | 496.    | 0.405                     | 3.006  | 0.653    | 0.304  | 0.140     |
| 43383  | 520.    | 0.379                     | 3.079  | 0.650    | 0.321  | 0.075     |
| 43385  | 546.    | 0.359                     | 2.993  | 0.575    | 0.293  | 0.154     |
| 43388  | 582.    | 0.368                     | 3.538  | 0.732    | 0.302  | 0.185     |
| 43392  | 513.    | 0.394                     | 3.101  | 0.690    | 0.283  | 0.136     |
| MEAN   | 537.    | 0.380                     | 3.183  | 0.674    | 0.303  | 0.210     |
| S.D.   | 55.2    | 0.0393                    | 0.2653 | 0.0547   | 0.0199 | 0.0268    |
| N      | 10      | 10                        | 10     | 10       | 10     | 10        |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE   |        | GROUP: 1000 MG/KG/DAY |        | PROSTATE | TESTIS |
|--------|---------|--------|--------|-----------------------|--------|----------|--------|
|        |         | BRAIN  | LIVER  | KIDNEY                | HEART  |          |        |
| 43297  | 516.    | 0.388  | 3.928  | 0.672                 | 0.298  | 0.147    | 0.215  |
| 43325  | 457.    | 0.444  | 3.783  | 0.665                 | 0.319  | 0.149    | 0.197  |
| 43328  | 505.    | 0.394  | 3.822  | 0.745                 | 0.313  | 0.145    | 0.309  |
| 43346  | 432.    | 0.449  | 3.877  | 0.692                 | 0.292  | 0.137    | 0.352  |
| 43362  | 495.    | 0.406  | 3.713  | 0.651                 | 0.271  | 0.168    | 0.248  |
| 43372  | 595.    | 0.358  | 4.192  | 0.600                 | 0.279  | 0.134    | 0.238  |
| 43373  | 422.    | 0.462  | 3.637  | 0.754                 | 0.318  | 0.154    | 0.245  |
| 43377  | 473.    | 0.427  | 3.879  | 0.755                 | 0.296  | 0.159    | 0.289  |
| 43397  | 531.    | 0.352  | 3.863  | 0.674                 | 0.324  | 0.194    | 0.332  |
| MEAN   | 492.    | 0.409  | 3.855  | 0.690                 | 0.301  | 0.154    | 0.269  |
| S.D.   | 53.6    | 0.0395 | 0.1557 | 0.0526                | 0.0187 | 0.0183   | 0.0452 |
| N      | 9       | 9      | 9      | 9                     | 9      | 9        | 9      |

FBW = FINAL BODY WEIGHT

PAGE 4  
WEEK 13

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 0 MG/KG/DAY |                      |                         |                           |                           |                 |                   |
|--------|--------|-------------------------|----------------------|-------------------------|---------------------------|---------------------------|-----------------|-------------------|
|        |        | LT<br>DIDYMIS           | RT<br>EPI<br>DIDYMIS | LT<br>EPI<br>EPIDIDYMIS | RT<br>CAUDA<br>EPIDIDYMIS | LT<br>CAUDA<br>EPIDIDYMIS | THYMUS<br>GLAND | ADRENAL<br>GLANDS |
| 43332  | 0.333  | 0.119                   | 0.130                | 0.060                   | 0.060                     | 0.053                     | 0.010           | 0.006             |
| 43334  | 0.319  | 0.136                   | 0.132                | 0.055                   | 0.063                     | 0.066                     | 0.012           | 0.004             |
| 43336  | 0.383  | 0.165                   | 0.154                | 0.066                   | 0.057                     | 0.080                     | 0.010           | 0.006             |
| 43339  | 0.301  | 0.113                   | 0.129                | 0.053                   | 0.056                     | 0.063                     | 0.014           | 0.003             |
| 43349  | 0.296  | 0.126                   | 0.124                | 0.047                   | 0.056                     | 0.061                     | 0.011           | 0.004             |
| 43345  | 0.108  | 0.020                   | 0.061                | 0.021                   | 0.025                     | 0.044                     | 0.011           | 0.003             |
| 43365  | 0.278  | 0.119                   | 0.114                | 0.054                   | 0.059                     | 0.056                     | 0.009           | 0.004             |
| 43368  | 0.297  | 0.135                   | 0.102                | 0.055                   | 0.049                     | 0.062                     | 0.009           | 0.004             |
| 43369  | 0.364  | 0.154                   | 0.124                | 0.071                   | 0.055                     | 0.060                     | 0.009           | 0.005             |
| 43379  | 0.337  | 0.136                   | 0.125                | 0.059                   | 0.053                     | 0.045                     | 0.012           | 0.006             |
| 43391  |        |                         |                      |                         |                           |                           |                 |                   |
| MEAN   | 0.302  | 0.122                   | 0.120                | 0.054                   | 0.053                     | 0.059                     | 0.011           | 0.005             |
| S.D.   | 0.0754 | 0.0394                  | 0.0244               | 0.0135                  | 0.0107                    | 0.0105                    | 0.0016          | 0.0012            |
| N      | 10     | 10                      | 10                   | 10                      | 10                        | 10                        | 10              | 10                |

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 100 MG/KG/DAY |                |                |                     |                     |              | ADRENAL GLANDS | THYROIDS /PARA |
|--------|--------|---------------------------|----------------|----------------|---------------------|---------------------|--------------|----------------|----------------|
|        |        | LT                        | RT EPI DIDYMIS | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND |                |                |
| 43342  | 0.302  | 0.135                     | 0.127          | 0.059          | 0.053               | 0.070               | 0.011        | 0.009          |                |
| 43350  | 0.316  | 0.124                     | 0.133          | 0.046          | 0.058               | 0.056               | 0.010        | 0.004          |                |
| 43351  | 0.309  | 0.129                     | 0.127          | 0.048          | 0.054               | 0.048               | 0.011        | 0.005          |                |
| 43354  | 0.375  | 0.153                     | 0.155          | 0.068          | 0.070               | 0.055               | 0.011        | 0.005          |                |
| 43364  | 0.262  | 0.123                     | 0.111          | 0.054          | 0.052               | 0.048               | 0.012        | 0.005          |                |
| 43371  | 0.298  | 0.128                     | 0.122          | 0.054          | 0.053               | 0.076               | 0.012        | 0.007          |                |
| 43380  | 0.314  | 0.130                     | 0.123          | 0.059          | 0.058               | 0.051               | 0.011        | 0.005          |                |
| 43382  | 0.356  | 0.133                     | 0.142          | 0.056          | 0.062               | 0.049               | 0.010        | 0.004          |                |
| 43384  | 0.266  | 0.118                     | 0.116          | 0.055          | 0.052               | 0.045               | 0.010        | 0.004          |                |
| 43386  | 0.328  | 0.145                     | 0.143          | 0.069          | 0.068               | 0.076               | 0.011        | 0.005          |                |
| MEAN   | 0.313  | 0.132                     | 0.130          | 0.057          | 0.058               | 0.057               | 0.011        | 0.005          |                |
| S.D.   | 0.0351 | 0.0105                    | 0.0135         | 0.0074         | 0.0066              | 0.0120              | 0.0007       | 0.0016         |                |
| N      | 10     | 10                        | 10             | 10             | 10                  | 10                  | 10           | 10             |                |

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 300 MG/KG/DAY |                |                |                     |                     |              | ADRENAL GLANDS | THYMOGLANDS /PARA THYROIDS |
|--------|---------------------------|----------------|----------------|---------------------|---------------------|--------------|----------------|----------------------------|
|        | LT TESTIS                 | RT EPI DIDYMIS | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND |                |                            |
| 43323  | 0.364                     | 0.123          | 0.137          | 0.056               | 0.056               | 0.052        | 0.010          | 0.009                      |
| 43331  | 0.294                     | 0.145          | 0.153          | 0.072               | 0.062               | 0.049        | 0.008          | 0.005                      |
| 43341  | 0.364                     | 0.125          | 0.136          | 0.055               | 0.064               | 0.054        | 0.009          | 0.004                      |
| 43355  | 0.275                     | 0.110          | 0.105          | 0.052               | 0.052               | 0.068        | 0.013          | 0.005                      |
| 43361  | 0.270                     | 0.109          | 0.095          | 0.054               | 0.043               | 0.034        | 0.009          | 0.005                      |
| 43363  | 0.286                     | 0.133          | 0.107          | 0.060               | 0.044               | 0.079        | 0.009          | 0.004                      |
| 43383  | 0.337                     | 0.142          | 0.135          | 0.057               | 0.064               | 0.055        | 0.011          | 0.006                      |
| 43385  | 0.278                     | 0.115          | 0.104          | 0.050               | 0.054               | 0.040        | 0.010          | 0.004                      |
| 43388  | 0.292                     | 0.120          | 0.139          | 0.047               | 0.062               | 0.047        | 0.011          | 0.004                      |
| 43392  | 0.322                     | 0.133          | 0.131          | 0.060               | 0.055               | 0.054        | 0.011          | 0.004                      |
| MEAN   | 0.308                     | 0.126          | 0.124          | 0.056               | 0.056               | 0.053        | 0.010          | 0.005                      |
| S.D.   | 0.0360                    | 0.0126         | 0.0195         | 0.0069              | 0.0077              | 0.0129       | 0.0014         | 0.0016                     |
| N      | 10                        | 10             | 10             | 10                  | 10                  | 10           | 10             | 10                         |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRTP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 1000 MG/KG/DAY |           |                |                |                     |                     |              |                |                       |  |
|--------|----------------------------|-----------|----------------|----------------|---------------------|---------------------|--------------|----------------|-----------------------|--|
|        | LT TESTIS                  | RT TESTIS | LT EPI DIDYMIS | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | RT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS | THYROID GLANDS / PARA |  |
| 43297  | 0.310                      | 0.114     | 0.120          | 0.051          | 0.055               | 0.035               | 0.011        | 0.004          |                       |  |
| 43325  | 0.311                      | 0.138     | 0.133          | 0.058          | 0.057               | 0.046               | 0.011        | 0.006          |                       |  |
| 43328  | 0.349                      | 0.143     | 0.139          | 0.070          | 0.059               | 0.056               | 0.013        | 0.005          |                       |  |
| 43346  | 0.419                      | 0.169     | 0.167          | 0.075          | 0.077               | 0.149               | 0.011        | 0.005          |                       |  |
| 43362  | 0.325                      | 0.131     | 0.139          | 0.051          | 0.065               | 0.059               | 0.011        | 0.006          |                       |  |
| 43372  | 0.274                      | 0.126     | 0.121          | 0.053          | 0.056               | 0.051               | 0.011        | 0.003          |                       |  |
| 43373  | 0.287                      | 0.171     | 0.137          | 0.089          | 0.061               | 0.069               | 0.013        | 0.004          |                       |  |
| 43377  | 0.332                      | 0.142     | 0.131          | 0.053          | 0.057               | 0.055               | 0.010        | 0.007          |                       |  |
| 43397  | 0.309                      | 0.141     | 0.132          | 0.068          | 0.059               | 0.054               | 0.011        | 0.004          |                       |  |
| MEAN   | 0.324                      | 0.142     | 0.135          | 0.063          | 0.061               | 0.053               | 0.011        | 0.005          |                       |  |
| S.D.   | 0.0421                     | 0.0185    | 0.0137         | 0.0133         | 0.0068              | 0.0093              | 0.0010       | 0.0013         |                       |  |
| N      | 9                          | 9         | 9              | 9              | 9                   | 9                   | 9            | 9              |                       |  |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 0 MG/KG/DAY |         |        |        |        |        |        |        |                      |                 |                   |                   |
|---------------------------|---------|--------|--------|--------|--------|--------|--------|----------------------|-----------------|-------------------|-------------------|
| ANIMAL                    | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS | OVARIES/<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/PARA |
| 43433                     | 290.    | 0.628  | 3.031  | 0.741  | 0.417  | 0.159  | 0.266  | 0.048                | 0.087           | 0.028             | 0.007             |
| 43435                     | 315.    | 0.638  | 2.768  | 0.714  | 0.317  | 0.184  | 0.390  | 0.048                | 0.114           | 0.018             | 0.006             |
| 43436                     | 299.    | 0.625  | 2.856  | 0.759  | 0.415  | 0.211  | 0.281  | 0.056                | 0.084           | 0.026             | 0.007             |
| 43438                     | 278.    | 0.637  | 2.475  | 0.683  | 0.378  | 0.173  | 0.331  | 0.049                | 0.107           | 0.023             | 0.005             |
| 43449                     | 260.    | 0.715  | 2.688  | 0.688  | 0.327  | 0.165  | 0.327  | 0.049                | 0.072           | 0.024             | 0.006             |
| 43467                     | 294.    | 0.684  | 3.044  | 0.908  | 0.371  | 0.214  | 0.197  | 0.052                | 0.109           | 0.028             | 0.006             |
| 43474                     | 229.    | 0.734  | 2.917  | 0.817  | 0.393  | 0.192  | 0.188  | 0.052                | 0.081           | 0.029             | 0.007             |
| 43483                     | 265.    | 0.717  | 3.083  | 0.736  | 0.404  | 0.147  | 0.215  | 0.052                | 0.076           | 0.027             | 0.008             |
| 43497                     | 287.    | 0.645  | 2.854  | 0.704  | 0.373  | 0.195  | 0.394  | 0.071                | 0.057           | 0.027             | 0.004             |
| 43501                     | 295.    | 0.610  | 3.156  | 0.692  | 0.502  | 0.166  | 0.258  | 0.035                | 0.091           | 0.024             | 0.005             |
| MEAN                      | 281.    | 0.663  | 2.887  | 0.744  | 0.390  | 0.181  | 0.285  | 0.051                | 0.088           | 0.025             | 0.006             |
| S.D.                      | 24.4    | 0.0450 | 0.2062 | 0.0704 | 0.0518 | 0.0224 | 0.0745 | 0.0089               | 0.0180          | 0.0033            | 0.0012            |
| N                         | 10      | 10     | 10     | 10     | 10     | 10     | 10     | 10                   | 10              | 10                | 10                |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | FEMALE GROUP: 100 MG/KG/DAY |        |         |        |        |            |
|--------|---------|-----------------------------|--------|---------|--------|--------|------------|
|        |         | BRAIN                       | LIVER  | KIDNEYS | HEART  | SPLEEN | UTERUS/CVX |
| 43420  | 260.    | 0.681                       | 4.242  | 0.835   | 0.365  | 0.185  | 0.277      |
| 43439  | 266.    | 0.718                       | 3.320  | 0.628   | 0.312  | 0.158  | 0.173      |
| 43458  | 236.    | 0.775                       | 3.530  | 0.729   | 0.436  | 0.169  | 0.233      |
| 43462  | 228.    | 0.768                       | 3.531  | 0.750   | 0.390  | 0.206  | 0.193      |
| 43468  | 294.    | 0.646                       | 3.486  | 0.755   | 0.422  | 0.190  | 0.204      |
| 43486  | 297.    | 0.633                       | 3.623  | 0.673   | 0.370  | 0.158  | 0.31       |
| 43489  | 295.    | 0.637                       | 3.492  | 0.729   | 0.407  | 0.193  | 0.259      |
| 43502  | 274.    | 0.657                       | 3.471  | 0.686   | 0.409  | 0.179  | 0.292      |
| 43511  | 304.    | 0.609                       | 3.313  | 0.727   | 0.352  | 0.171  | 0.181      |
| 43515  | 316.    | 0.573                       | 3.826  | 0.677   | 0.367  | 0.171  | 0.282      |
| MEAN   | 277.    | 0.670                       | 3.583  | 0.719   | 0.383  | 0.178  | 0.228      |
| S.D.   | 29.4    | 0.0662                      | 0.2734 | 0.0570  | 0.0371 | 0.0156 | 0.0462     |
| N      | 10      | 10                          | 10     | 10      | 10     | 10     | 10         |

FBW = FINAL BODY WEIGHT

PAGE 10  
WEEK 13

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 300 MG/KG/DAY |         |        |        |        |        |        |                 |                               |                 |
|-----------------------------|---------|--------|--------|--------|--------|--------|-----------------|-------------------------------|-----------------|
| ANIMAL                      | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS<br>US/CX | OVARIES/<br>OUTDUCTS<br>US/CX | THYMUS<br>GLAND |
|                             |         |        |        |        |        |        |                 |                               |                 |
| 43463                       | 246.    | 0.687  | 3.598  | 0.720  | 0.346  | 0.191  | 0.183           | 0.052                         | 0.044           |
| 43475                       | 308.    | 0.617  | 3.104  | 0.617  | 0.344  | 0.166  | 0.188           | 0.044                         | 0.026           |
| 43478                       | 359.    | 0.538  | 3.571  | 0.574  | 0.323  | 0.156  | 0.167           | 0.071                         | 0.018           |
| 43491                       | 308.    | 0.562  | 3.091  | 0.643  | 0.341  | 0.130  | 0.279           | 0.026                         | 0.019           |
| 43495                       | 273.    | 0.718  | 4.004  | 0.707  | 0.385  | 0.150  | 0.249           | 0.043                         | 0.088           |
| 43496                       | 316.    | 0.601  | 3.918  | 0.801  | 0.405  | 0.259  | 0.263           | 0.045                         | 0.085           |
| 43508                       | 276.    | 0.681  | 3.797  | 0.739  | 0.370  | 0.214  | 0.207           | 0.033                         | 0.078           |
| 43513                       | 300.    | 0.653  | 3.320  | 0.683  | 0.403  | 0.240  | 0.193           | 0.060                         | 0.100           |
| 43516                       | 304.    | 0.582  | 3.984  | 0.809  | 0.345  | 0.155  | 0.283           | 0.035                         | 0.146           |
| 43517                       | 276.    | 0.688  | 3.391  | 0.721  | 0.377  | 0.225  | 0.232           | 0.044                         | 0.027           |
| MEAN                        | 297.    | 0.633  | 3.578  | 0.701  | 0.364  | 0.189  | 0.224           | 0.045                         | 0.091           |
| S.D.                        | 30.8    | 0.0613 | 0.3454 | 0.0751 | 0.0282 | 0.0437 | 0.0424          | 0.0118                        | 0.0270          |
| N                           | 10      | 10     | 10     | 10     | 10     | 10     | 10              | 10                            | 10              |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 124 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)  
FEMALE GROUP: 1000 MG/KG/DAY

| ANIMAL | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS | OVARIES / OVIDUCTS | THYMUS GLAND | ADRENAL GLANDS | THYROIDS / PARA |
|--------|---------|--------|--------|--------|--------|--------|--------|--------------------|--------------|----------------|-----------------|
|        |         |        |        |        |        |        | US/CX  |                    |              |                |                 |
| 43440  | 268.    | 0.660  | 4.407  | 0.735  | 0.358  | 0.138  | 0.153  | 0.052              | 0.099        | 0.027          | 0.008           |
| 43456  | 370.    | 0.481  | 4.062  | 0.608  | 0.357  | 0.176  | 0.149  | 0.035              | 0.073        | 0.021          | 0.005           |
| 43460  | 234.    | 0.816  | 4.214  | 0.739  | 0.436  | 0.205  | 0.239  | 0.062              | 0.059        | 0.036          | 0.007           |
| 43466  | 333.    | 0.547  | 4.333  | 0.706  | 0.363  | 0.171  | 0.153  | 0.050              | 0.067        | 0.020          | 0.007           |
| 43477  | 270.    | 0.693  | 4.381  | 0.789  | 0.374  | 0.289  | 0.285  | 0.045              | 0.095        | 0.025          | 0.006           |
| 43479  | 274.    | 0.679  | 4.686  | 0.828  | 0.350  | 0.157  | 0.318  | 0.066              | 0.079        | 0.023          | 0.005           |
| 43481  | 342.    | 0.561  | 4.070  | 0.670  | 0.348  | 0.137  | 0.231  | 0.043              | 0.073        | 0.019          | 0.006           |
| 43484  | 286.    | 0.664  | 3.979  | 0.647  | 0.371  | 0.182  | 0.150  | 0.045              | 0.056        | 0.016          | 0.007           |
| 43492  | 252.    | 0.726  | 4.873  | 0.778  | 0.417  | 0.234  | 0.202  | 0.068              | 0.073        | 0.033          | 0.009           |
| 43503  | 262.    | 0.634  | 4.137  | 0.653  | 0.347  | 0.149  | 0.309  | 0.057              | 0.113        | 0.028          | 0.009           |
| MEAN   | 289.    | 0.646  | 4.314  | 0.715  | 0.372  | 0.184  | 0.219  | 0.052              | 0.079        | 0.025          | 0.007           |
| S.D.   | 44.1    | 0.0963 | 0.2869 | 0.0709 | 0.0304 | 0.0477 | 0.0679 | 0.0108             | 0.0182       | 0.0063         | 0.0014          |
| N      | 10      |        | 10     | 10     | 10     | 10     | 10     | 10                 | 10           | 10             | 10              |

FBW = FINAL BODY WEIGHT

POFBW4\_05  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | PROSTATE | TESTIS | RT   |        |
|--------|---------|--------|--------|--------|--------|--------|----------|--------|------|--------|
|        |         |        |        |        |        |        |          |        | MALE | GROUP: |
| 43289  | 561.    | 0.355  | 2.681  | 0.643  | 0.328  | 0.111  | 0.184    | 0.308  |      |        |
| 43295  | 574.    | 0.345  | 2.714  | 0.707  | 0.280  | 0.113  | 0.225    | 0.296  |      |        |
| 43308  | 554.    | 0.345  | 2.693  | 0.637  | 0.305  | 0.125  | 0.269    | 0.256  |      |        |
| 43316  | 511.    | 0.425  | 2.587  | 0.646  | 0.286  | 0.137  | 0.194    | 0.341  |      |        |
| 43326  | 509.    | 0.354  | 2.587  | 0.550  | 0.316  | 0.110  | 0.250    | 0.303  |      |        |
| MEAN   | 542.    | 0.365  | 2.652  | 0.637  | 0.303  | 0.119  | 0.224    | 0.301  |      |        |
| S.D.   | 29.9    | 0.0340 | 0.0609 | 0.0561 | 0.0201 | 0.0116 | 0.0361   | 0.0304 |      |        |
| N      | 5       | 5      | 5      | 5      | 5      | 5      | 5        | 5      |      |        |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 100 MG/KG/DAY |        |        |        |        | MALE GROUP: 100 MG/KG/DAY |        |           |    |        |
|--------|---------|---------------------------|--------|--------|--------|--------|---------------------------|--------|-----------|----|--------|
|        |         | BRAIN                     | LIVER  | KIDNEY | HEART  | SPLEEN | PROSTATE                  | TESTIS | RT TESTIS | RT | TESTIS |
| 43285  | 601.    | 0.351                     | 2.887  | 0.644  | 0.286  | 0.130  | 0.113                     | 0.283  |           |    |        |
| 43293  | 571.    | 0.373                     | 2.988  | 0.762  | 0.315  | 0.138  | 0.156                     | 0.268  |           |    |        |
| 43311  | 475.    | 0.451                     | 2.968  | 0.747  | 0.328  | 0.175  | 0.196                     | 0.354  |           |    |        |
| 43320  | 473.    | 0.412                     | 2.767  | 0.748  | 0.311  | 0.144  | 0.211                     | 0.300  |           |    |        |
| 43340  | 377.    | 0.533                     | 3.183  | 0.759  | 0.390  | 0.172  | 0.196                     | 0.053  |           |    |        |
| MEAN   | 499.    | 0.424                     | 2.959  | 0.732  | 0.326  | 0.152  | 0.174                     | 0.252  |           |    |        |
| S.D.   | 89.1    | 0.0719                    | 0.1526 | 0.0496 | 0.0389 | 0.0204 | 0.0399                    | 0.1157 |           |    |        |
| N      | 5       | 5                         | 5      | 5      | 5      | 5      | 5                         | 5      |           |    |        |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | PROSTATE | TESTIS | MALE GROUP: 300 MG/KG/DAY |    |
|--------|---------|--------|--------|--------|--------|--------|----------|--------|---------------------------|----|
|        |         |        |        |        |        |        |          |        | NEYS                      | RT |
| 43290  | 475.    | 0.423  | 2.743  | 0.699  | 0.307  | 0.147  | 0.105    | 0.309  |                           |    |
| 43307  | 540.    | 0.374  | 3.091  | 0.776  | 0.315  | 0.130  | 0.222    | 0.294  |                           |    |
| 43309  | 601.    | 0.341  | 2.970  | 0.790  | 0.306  | 0.150  | 0.208    | 0.318  |                           |    |
| 43318  | 583.    | 0.341  | 2.772  | 0.686  | 0.307  | 0.156  | 0.238    | 0.268  |                           |    |
| 43322  | 488.    | 0.447  | 2.988  | 0.711  | 0.332  | 0.176  | 0.203    | 0.342  |                           |    |
| MEAN   | 537.    | 0.385  | 2.913  | 0.732  | 0.313  | 0.152  | 0.195    | 0.306  |                           |    |
| S.D.   | 55.8    | 0.0482 | 0.1494 | 0.0473 | 0.0110 | 0.0166 | 0.0522   | 0.0276 |                           |    |
| N      | 5       | 5      | 5      | 5      | 5      | 5      | 5        | 5      |                           |    |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-106012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 1000 MG/KG/DAY |        |        |        |        | MALE GROUP: 1000 MG/KG/DAY |        |    |        |  |
|--------|---------|----------------------------|--------|--------|--------|--------|----------------------------|--------|----|--------|--|
|        |         | BRAIN                      | LIVER  | KIDNEY | HEART  | SPLEEN | PROSTATE                   | TATE   | RT | TESTIS |  |
| 43277  | 493.    | 0.389                      | 2.744  | 0.657  | 0.312  | 0.110  | 0.262                      | 0.304  |    |        |  |
| 43278  | 479.    | 0.399                      | 2.593  | 0.706  | 0.363  | 0.111  | 0.288                      | 0.305  |    |        |  |
| 43280  | 598.    | 0.326                      | 2.987  | 0.714  | 0.299  | 0.130  | 0.179                      | 0.286  |    |        |  |
| 43281  | 513.    | 0.425                      | 3.004  | 0.762  | 0.312  | 0.150  | 0.195                      | 0.285  |    |        |  |
| 43282  | 398.    | 0.472                      | 2.822  | 0.827  | 0.314  | 0.166  | 0.166                      | 0.427  |    |        |  |
| MEAN   | 496.    | 0.402                      | 2.830  | 0.733  | 0.320  | 0.133  | 0.218                      | 0.321  |    |        |  |
| S.D.   | 71.8    | 0.0533                     | 0.1722 | 0.0643 | 0.0248 | 0.0245 | 0.0538                     | 0.0598 |    |        |  |
| N      | 5       | 5                          | 5      | 5      | 5      | 5      | 5                          | 5      |    |        |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 0 MG/KG/DAY |                |                |                     |                     |              |                |                |
|--------|-------------------------|----------------|----------------|---------------------|---------------------|--------------|----------------|----------------|
|        | LT TESTIS               | RT EPI DIDYMIS | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS | THYROID / PARA |
| 43289  | 0.305                   | 0.134          | 0.139          | 0.063               | 0.065               | 0.037        | 0.010          | 0.005          |
| 43295  | 0.298                   | 0.129          | 0.125          | 0.052               | 0.054               | 0.058        | 0.011          | 0.005          |
| 43308  | 0.244                   | 0.134          | 0.128          | 0.059               | 0.060               | 0.051        | 0.010          | 0.004          |
| 43316  | 0.323                   | 0.139          | 0.143          | 0.056               | 0.058               | 0.083        | 0.016          | 0.006          |
| 43326  | 0.275                   | 0.122          | 0.104          | 0.048               | 0.046               | 0.059        | 0.014          | 0.006          |
| MEAN   | 0.289                   | 0.132          | 0.128          | 0.056               | 0.057               | 0.058        | 0.012          | 0.005          |
| S.D.   | 0.0305                  | 0.0064         | 0.0153         | 0.0059              | 0.0071              | 0.0167       | 0.0027         | 0.0008         |
| N      | 5                       | 5              | 5              | 5                   | 5                   | 5            | 5              | 5              |

PAGE 5  
WEEK 17

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL                               | TESTIS | MALE GROUP: 100 MG/KG/DAY |                   |                      |                        |                        |                 |                   |
|--------------------------------------|--------|---------------------------|-------------------|----------------------|------------------------|------------------------|-----------------|-------------------|
|                                      |        | LT<br>DIDYMIS             | RT EPI<br>DIDYMIS | LT EPI<br>EPIDIDYMIS | RT CAUDA<br>EPIDIDYMIS | LT CAUDA<br>EPIDIDYMIS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS /PARA |
| 43285                                | 0.293  | 0.121                     | 0.123             | 0.054                | 0.060                  | 0.049                  | 0.011           | 0.007             |
| 43293                                | 0.277  | 0.126                     | 0.142             | 0.056                | 0.072                  | 0.047                  | 0.011           | 0.005             |
| 43311                                | 0.356  | 0.175                     | 0.162             | 0.075                | 0.072                  | 0.050                  | 0.014           | 0.006             |
| 43320                                | 0.300  | 0.127                     | 0.131             | 0.053                | 0.062                  | 0.029                  | 0.011           | 0.006             |
| 43340                                | 0.276  | 0.016                     | 0.141             | NA                   | 0.054                  | 0.051                  | 0.019           | 0.007             |
| MEAN                                 | 0.300  | 0.113                     | 0.140             | 0.060                | 0.064                  | 0.045                  | 0.013           | 0.006             |
| S.D.                                 | 0.0327 | 0.0585                    | 0.0147            | 0.0104               | 0.0079                 | 0.0092                 | 0.0035          | 0.0008            |
| N                                    | 5      | 5                         | 5                 | 4                    | 5                      | 5                      | 5               | 5                 |
| NA = ORGAN NOT POSITIVELY IDENTIFIED |        |                           |                   |                      |                        |                        |                 |                   |

PAGE 6  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 300 MG/KG/DAY |                |                |                     |                     |              |                |                |
|--------|---------------------------|----------------|----------------|---------------------|---------------------|--------------|----------------|----------------|
|        | LT TESTIS                 | RT EPI DIDYMIS | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS | THYROID / PARA |
| 43290  | 0.320                     | 0.145          | 0.145          | 0.061               | 0.067               | 0.061        | 0.014          | 0.007          |
| 43307  | 0.300                     | 0.122          | 0.130          | 0.053               | 0.057               | 0.068        | 0.010          | 0.005          |
| 43309  | 0.329                     | 0.140          | 0.133          | 0.070               | 0.067               | 0.062        | 0.009          | 0.005          |
| 43318  | 0.261                     | 0.127          | 0.106          | 0.051               | 0.045               | 0.032        | 0.008          | 0.004          |
| 43322  | 0.336                     | 0.150          | 0.160          | 0.068               | 0.078               | 0.059        | 0.013          | 0.005          |
| MEAN   | 0.309                     | 0.137          | 0.135          | 0.061               | 0.063               | 0.056        | 0.011          | 0.005          |
| S.D.   | 0.0301                    | 0.0119         | 0.0200         | 0.0086              | 0.0124              | 0.0140       | 0.0026         | 0.0011         |
| N      | 5                         | 5              | 5              | 5                   | 5                   | 5            | 5              | 5              |

PAGE 7  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 1000 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|----------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS             | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43277  | 0.316  | 0.142                      | 0.140          | 0.062               | 0.058               | 0.053        | 0.008          |
| 43278  | 0.303  | 0.150                      | 0.140          | 0.061               | 0.036               | 0.010        | 0.007          |
| 43280  | 0.293  | 0.124                      | 0.122          | 0.045               | 0.051               | 0.056        | 0.005          |
| 43281  | 0.285  | 0.127                      | 0.140          | 0.066               | 0.072               | 0.064        | 0.004          |
| 43282  | 0.412  | 0.166                      | 0.163          | 0.057               | 0.073               | 0.065        | 0.006          |
| MEAN   | 0.322  | 0.142                      | 0.141          | 0.058               | 0.063               | 0.055        | 0.011          |
| S.D.   | 0.0517 | 0.0172                     | 0.0146         | 0.0080              | 0.0094              | 0.0026       | 0.0006         |
| N      | 5      | 5                          | 5              | 5                   | 5                   | 5            | 5              |

PAGE 8  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 0 MG/KG/DAY |         |        |        |        |        |        |           |                  |              |                |                       |
|---------------------------|---------|--------|--------|--------|--------|--------|-----------|------------------|--------------|----------------|-----------------------|
| ANIMAL                    | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS/CX | OVARIES/OVIDUCTS | THYMUS GLAND | ADRENAL GLANDS | THYROID / PARATHYROID |
| 43398                     | 243.    | 0.765  | 2.959  | 0.819  | 0.346  | 0.198  | 0.502     | 0.049            | 0.131        | 0.026          | 0.005                 |
| 43405                     | 326.    | 0.571  | 2.592  | 0.675  | 0.353  | 0.141  | 0.156     | 0.041            | 0.093        | 0.019          | 0.005                 |
| 43409                     | 267.    | 0.689  | 3.094  | 0.674  | 0.397  | 0.169  | 0.363     | 0.031            | 0.079        | 0.024          | 0.006                 |
| 43423                     | 269.    | 0.699  | 2.721  | 0.662  | 0.353  | 0.190  | 0.271     | 0.052            | 0.097        | 0.029          | 0.007                 |
| 43432                     | 301.    | 0.658  | 3.073  | 0.678  | 0.412  | 0.166  | 0.150     | 0.049            | 0.072        | 0.021          | 0.006                 |
| MEAN                      | 281.    | 0.676  | 2.888  | 0.702  | 0.372  | 0.173  | 0.288     | 0.044            | 0.094        | 0.024          | 0.006                 |
| S.D.                      | 32.4    | 0.0707 | 0.2220 | 0.0659 | 0.0301 | 0.024  | 0.1485    | 0.0085           | 0.0228       | 0.0040         | 0.0008                |
| N                         | 5       | 5      | 5      | 5      | 5      | 5      | 5         | 5                | 5            | 5              | 5                     |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | FEMALE GROUP: 100 MG/KG/DAY |        |        |        |        |        |                  |              |                |                 |
|--------|---------|-----------------------------|--------|--------|--------|--------|--------|------------------|--------------|----------------|-----------------|
|        |         | BRAIN                       | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS | OVARIES/OVIDUCTS | THYMUS GLAND | ADRENAL GLANDS | THYROIDS / PARA |
| 43400  | 313.    | 0.633                       | 2.594  | 0.620  | 0.351  | 0.208  | 0.242  | 0.044            | 0.088        | 0.023          | 0.007           |
| 43407  | 242.    | 0.764                       | 3.062  | 0.806  | 0.372  | 0.194  | 0.211  | 0.053            | 0.125        | 0.025          | 0.008           |
| 43413  | 282.    | 0.677                       | 2.489  | 0.582  | 0.330  | 0.163  | 0.191  | 0.049            | 0.102        | 0.017          | 0.005           |
| 43416  | 287.    | 0.662                       | 2.516  | 0.564  | 0.366  | 0.188  | 0.167  | 0.047            | 0.075        | 0.028          | 0.009           |
| 43419  | 239.    | 0.791                       | 3.377  | 0.808  | 0.402  | 0.238  | 0.197  | 0.066            | 0.094        | 0.023          | 0.008           |
| MEAN   | 273.    | 0.705                       | 2.808  | 0.676  | 0.364  | 0.198  | 0.204  | 0.052            | 0.097        | 0.023          | 0.007           |
| S.D.   | 31.6    | 0.0684                      | 0.3940 | 0.1213 | 0.0266 | 0.0276 | 0.0314 | 0.0086           | 0.0186       | 0.0040         | 0.0015          |
| N      | 5       | 5                           | 5      | 5      | 5      | 5      | 5      | 5                | 5            | 5              | 5               |

FBW = FINAL BODY WEIGHT

PAGE 10  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 300 MG/KG/DAY |         |        |        |         |        |        |                     |
|-----------------------------|---------|--------|--------|---------|--------|--------|---------------------|
| ANIMAL                      | FBW (G) | BRAIN  | LIVER  | KIDNEYS | HEART  | SPLEEN | UTERUS/CVX OVIDUCTS |
| 43402                       | 323.    | 0.604  | 3.573  | 0.820   | 0.399  | 0.192  | 0.238               |
| 43426                       | 235.    | 0.787  | 2.902  | 0.745   | 0.362  | 0.166  | 0.260               |
| 43442                       | 285.    | 0.712  | 3.393  | 0.789   | 0.375  | 0.211  | 0.256               |
| 43446                       | 227.    | 0.784  | 3.203  | 0.837   | 0.410  | 0.216  | 0.436               |
| 43461                       | 295.    | 0.617  | 2.976  | 0.685   | 0.363  | 0.227  | 0.190               |
| MEAN                        | 273.    | 0.701  | 3.209  | 0.775   | 0.382  | 0.202  | 0.276               |
| S.D.                        | 40.9    | 0.0879 | 0.2806 | 0.0614  | 0.0217 | 0.0240 | 0.037               |
| N                           | 5       | 5      | 5      | 5       | 5      | 5      | 5                   |

FBW = FINAL BODY WEIGHT

PAGE 11  
WEEK 17

PROJECT NO.: WIL-136012  
SPONSOR : CMA-BFRIP

TABLE 125 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO FINAL BODY WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 1000 MG/KG/DAY |         |        |        |        |        |        |            |
|------------------------------|---------|--------|--------|--------|--------|--------|------------|
| ANIMAL                       | FBW (G) | BRAIN  | LIVER  | KIDNEY | HEART  | SPLEEN | UTERUS/CVX |
| 43401                        | 328.    | 0.558  | 3.271  | 0.784  | 0.409  | 0.155  | 0.259      |
| 43410                        | 231.    | 0.775  | 2.918  | 0.697  | 0.394  | 0.186  | 0.251      |
| 43421                        | 297.    | 0.640  | 3.269  | 0.680  | 0.384  | 0.185  | 0.209      |
| 43429                        | 279.    | 0.720  | 3.416  | 0.746  | 0.423  | 0.201  | 0.183      |
| 43430                        | 279.    | 0.674  | 3.190  | 0.799  | 0.401  | 0.233  | 0.373      |
| MEAN                         | 283.    | 0.673  | 3.213  | 0.741  | 0.402  | 0.192  | 0.255      |
| S.D.                         | 35.2    | 0.0820 | 0.1839 | 0.0522 | 0.0148 | 0.084  | 0.029      |
| N                            | 5       | 5      | 5      | 5      | 5      | 5      | 5          |

FBW = FINAL BODY WEIGHT

PoFBWv4.05  
11/17/2000  
R:07/18/2001

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 126 (WEEK 13 PRIMAY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN WT<br>(GRAMS) |                    | LIVER   | KIDNEY | HEART  | SPLEEN | PROSTATE | TESTIS |
|--------|---------|---------------------|--------------------|---------|--------|--------|--------|----------|--------|
|        |         | MALE                | GROUP: 0 MG/KG/DAY |         |        |        |        |          |        |
| 43332  | 540.    | 1.96                | 715.816            | 219.388 | 81.122 | 34.184 | 47.449 | 85.204   |        |
| 43334  | 530.    | 2.14                | 670.093            | 158.411 | 83.178 | 47.196 | 46.729 | 82.243   |        |
| 43336  | 462.    | 2.19                | 552.968            | 147.945 | 72.146 | 30.594 | 41.096 | 79.452   |        |
| 43339  | 542.    | 2.06                | 755.340            | 197.087 | 91.262 | 37.864 | 51.456 | 81.553   |        |
| 43349  | 541.    | 2.15                | 640.465            | 149.767 | 73.488 | 41.860 | 54.419 | 77.209   |        |
| 43365  | 492.    | 1.88                | 683.511            | 170.213 | 76.596 | 31.915 | 28.723 | 30.319   |        |
| 43368  | 607.    | 1.97                | 818.782            | 172.081 | 87.310 | 49.746 | 56.853 | 83.249   |        |
| 43369  | 519.    | 2.09                | 702.392            | 159.809 | 70.335 | 40.670 | 44.976 | 77.512   |        |
| 43379  | 533.    | 2.04                | 732.353            | 163.726 | 79.902 | 33.824 | 52.941 | 94.118   |        |
| 43391  | 522.    | 1.99                | 747.236            | 176.884 | 83.417 | 45.729 | 39.196 | 93.970   |        |
| MEAN   | 529.    | 2.05                | 701.896            | 171.531 | 79.876 | 39.358 | 46.384 | 78.483   |        |
| S.D.   | 37.3    | 0.098               | 72.2640            | 22.0467 | 6.7680 | 6.7474 | 8.4173 | 17.9475  |        |
| N      | 10      | 10                  |                    | 10      | 10     | 10     | 10     | 10       |        |

FBW = FINAL BODY WEIGHT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | MALE GROUP: 100 MG/KG/DAY |          |         |        |        |         |              |    |        |  |
|--------|---------|---------------------------|----------|---------|--------|--------|---------|--------------|----|--------|--|
|        |         | BRAIN WT<br>(GRAMS)       | LIVER    | KID     | NEYS   | HEART  | SPLEEN  | PROS<br>TATE | RT | TESTIS |  |
| 43342  | 526.    | 2.10                      | 697.619  | 184.762 | 79.048 | 34.286 | 47.619  | 79.524       |    |        |  |
| 43350  | 566.    | 2.06                      | 847.087  | 161.651 | 81.068 | 36.893 | 44.175  | 81.553       |    |        |  |
| 43351  | 511.    | 2.07                      | 738.647  | 164.734 | 72.947 | 35.749 | 49.758  | 74.396       |    |        |  |
| 43354  | 472.    | 2.03                      | 787.685  | 161.576 | 76.847 | 46.305 | 49.261  | 86.207       |    |        |  |
| 43364  | 512.    | 1.95                      | 852.820  | 178.974 | 82.051 | 33.333 | 53.333  | 60.000       |    |        |  |
| 43371  | 547.    | 2.07                      | 903.382  | 190.821 | 76.329 | 30.435 | 51.691  | 79.227       |    |        |  |
| 43380  | 561.    | 2.08                      | 850.481  | 156.731 | 75.000 | 37.019 | 30.769  | 81.250       |    |        |  |
| 43382  | 534.    | 2.05                      | 779.512  | 176.585 | 73.171 | 30.732 | 41.463  | 90.732       |    |        |  |
| 43384  | 636.    | 2.18                      | 1033.486 | 192.661 | 78.899 | 45.872 | 69.266  | 76.606       |    |        |  |
| 43386  | 482.    | 2.10                      | 722.381  | 161.905 | 65.238 | 34.762 | 40.952  | 75.238       |    |        |  |
| MEAN   | 535.    | 2.07                      | 821.310  | 173.040 | 76.060 | 36.539 | 47.829  | 78.473       |    |        |  |
| S.D.   | 47.1    | 0.058                     | 99.4764  | 13.3601 | 4.8868 | 5.5071 | 10.0155 | 8.1704       |    |        |  |
| N      | 10      | 10                        | 10       | 10      | 10     | 10     | 10      | 10           |    |        |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN WT<br>(GRAMS) |                      | LIVER   |        | KIDNEY |         | HEART   |  | SPLEEN |  | PROSTATE |  | TESTIS |  |
|--------|---------|---------------------|----------------------|---------|--------|--------|---------|---------|--|--------|--|----------|--|--------|--|
|        |         | MALE                | GROUP: 300 MG/KG/DAY |         |        | NEYS   |         |         |  |        |  |          |  |        |  |
| 43323  | 431.    | 2.06                | 649.029              | 159.223 | 63.107 | 34.466 | 52.427  | 75.243  |  |        |  |          |  |        |  |
| 43331  | 537.    | 1.97                | 836.041              | 178.680 | 86.294 | 35.533 | 75.127  | 85.787  |  |        |  |          |  |        |  |
| 43341  | 536.    | 1.93                | 798.446              | 180.829 | 93.782 | 32.124 | 55.440  | 100.000 |  |        |  |          |  |        |  |
| 43355  | 564.    | 2.00                | 945.500              | 181.000 | 84.000 | 33.000 | 62.000  | 78.500  |  |        |  |          |  |        |  |
| 43361  | 641.    | 2.17                | 1096.313             | 215.207 | 78.802 | 41.475 | 55.760  | 77.880  |  |        |  |          |  |        |  |
| 43363  | 496.    | 2.01                | 741.791              | 161.194 | 75.124 | 18.408 | 34.826  | 70.149  |  |        |  |          |  |        |  |
| 43383  | 520.    | 1.97                | 812.690              | 171.574 | 84.772 | 40.609 | 48.731  | 91.371  |  |        |  |          |  |        |  |
| 43385  | 546.    | 1.96                | 833.673              | 160.204 | 81.633 | 37.755 | 57.653  | 75.000  |  |        |  |          |  |        |  |
| 43388  | 582.    | 2.14                | 962.150              | 199.065 | 82.243 | 42.991 | 57.944  | 77.570  |  |        |  |          |  |        |  |
| 43392  | 513.    | 2.02                | 787.624              | 175.248 | 71.782 | 39.109 | 54.950  | 81.683  |  |        |  |          |  |        |  |
| MEAN   | 537.    | 2.02                | 846.326              | 178.222 | 80.154 | 35.547 | 55.486  | 81.318  |  |        |  |          |  |        |  |
| S.D.   | 55.2    | 0.079               | 125.9337             | 17.7815 | 8.5239 | 7.0463 | 10.1167 | 8.8541  |  |        |  |          |  |        |  |
| N      | 10      | 10                  |                      | 10      | 10     | 10     | 10      | 10      |  |        |  |          |  |        |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN WT<br>(GRAMS) |          |         | KID    |        |         | HEART   |              |              | SPLEEN |              |              | PROS<br>TATE |              |              | RT<br>TESTIS |  |  |
|--------|---------|---------------------|----------|---------|--------|--------|---------|---------|--------------|--------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--|--|
|        |         | LIVER               | NEYS     | KID     | NEYS   | KID    | HEART   | SPLEEN  | PROS<br>TATE | RT<br>TESTIS | SPLEEN | PROS<br>TATE | RT<br>TESTIS | SPLEEN       | PROS<br>TATE | RT<br>TESTIS |              |  |  |
| 43297  | 516.    | 2.00                | 1013.500 | 173.500 | 77.000 | 38.000 | 55.500  | 74.000  |              |              |        |              |              |              |              |              |              |  |  |
| 43325  | 457.    | 2.03                | 851.724  | 149.754 | 71.921 | 33.498 | 44.335  | 68.473  |              |              |        |              |              |              |              |              |              |  |  |
| 43328  | 505.    | 1.99                | 969.849  | 188.945 | 79.397 | 36.683 | 78.392  | 89.447  |              |              |        |              |              |              |              |              |              |  |  |
| 43346  | 432.    | 1.94                | 863.402  | 154.124 | 64.948 | 30.412 | 55.155  | 93.814  |              |              |        |              |              |              |              |              |              |  |  |
| 43362  | 495.    | 2.01                | 914.428  | 160.199 | 66.667 | 41.294 | 58.706  | 80.597  |              |              |        |              |              |              |              |              |              |  |  |
| 43372  | 595.    | 2.13                | 1170.892 | 167.606 | 77.934 | 37.559 | 68.545  | 75.117  |              |              |        |              |              |              |              |              |              |  |  |
| 43373  | 422.    | 1.95                | 787.180  | 163.077 | 68.718 | 33.333 | 62.564  | 60.513  |              |              |        |              |              |              |              |              |              |  |  |
| 43377  | 473.    | 2.02                | 908.416  | 176.733 | 69.307 | 37.129 | 77.723  | 84.653  |              |              |        |              |              |              |              |              |              |  |  |
| 43397  | 531.    | 1.87                | 1096.792 | 191.444 | 91.979 | 55.080 | 63.636  | 85.562  |              |              |        |              |              |              |              |              |              |  |  |
| MEAN   | 492.    | 1.99                | 952.909  | 169.487 | 74.208 | 38.110 | 62.728  | 79.131  |              |              |        |              |              |              |              |              |              |  |  |
| S.D.   | 53.6    | 0.072               | 123.1632 | 14.5157 | 8.4144 | 7.1132 | 11.0055 | 10.5988 |              |              |        |              |              |              |              |              |              |  |  |
| N      | 9       | 9                   | 9        | 9       | 9      | 9      | 9       | 9       |              |              |        |              |              |              |              |              |              |  |  |

FBW = FINAL BODY WEIGHT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS  | MALE GROUP: 0 MG/KG/DAY |                |                     |                     |              |                |
|--------|---------|-------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |         | LT EPI DIDYMIS          | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | RT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43332  | 91.837  | 32.653                  | 35.714         | 16.526              | 16.638              | 14.719       | 2.709          |
| 43334  | 78.972  | 33.645                  | 32.710         | 13.640              | 15.598              | 16.234       | 2.855          |
| 43336  | 80.822  | 34.703                  | 32.420         | 13.849              | 12.110              | 16.922       | 2.114          |
| 43339  | 79.126  | 29.612                  | 33.981         | 13.922              | 14.650              | 16.456       | 3.718          |
| 43349  | 74.419  | 31.628                  | 31.163         | 11.805              | 14.214              | 15.233       | 2.688          |
| 43365  | 28.191  | 5.319                   | 15.957         | 5.569               | 6.468               | 11.441       | 0.734          |
| 43368  | 85.787  | 36.548                  | 35.025         | 16.589              | 18.081              | 17.127       | 2.711          |
| 43369  | 73.684  | 33.493                  | 25.359         | 13.603              | 12.268              | 15.455       | 2.187          |
| 43379  | 95.098  | 40.196                  | 32.353         | 18.618              | 14.490              | 15.745       | 2.260          |
| 43391  | 88.442  | 35.678                  | 32.663         | 15.513              | 13.965              | 11.754       | 3.196          |
| MEAN   | 77.638  | 31.348                  | 30.734         | 13.963              | 13.848              | 15.109       | 2.724          |
| S.D.   | 18.7816 | 9.5888                  | 5.9093         | 3.5418              | 3.1614              | 1.9956       | 0.4843         |
| N      | 10      | 10                      | 10             | 10                  | 10                  | 10           | 10             |

PAGE 5  
WEEK 13

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 126 (WEEK 13 PRIMAY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 100 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS            | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43342  | 75.714 | 33.910                    | 31.905         | 14.671              | 13.233              | 17.500       | 2.843          |
| 43350  | 86.893 | 33.981                    | 36.408         | 12.709              | 15.859              | 15.461       | 2.743          |
| 43351  | 76.329 | 31.884                    | 31.401         | 11.966              | 13.396              | 11.874       | 2.807          |
| 43354  | 87.192 | 35.468                    | 35.961         | 15.734              | 16.212              | 12.719       | 1.121          |
| 43364  | 68.718 | 32.308                    | 29.231         | 14.154              | 13.646              | 12.487       | 2.512          |
| 43371  | 78.744 | 33.816                    | 32.367         | 14.168              | 13.952              | 20.063       | 3.267          |
| 43380  | 84.615 | 35.096                    | 33.173         | 15.865              | 15.764              | 13.745       | 3.053          |
| 43382  | 92.683 | 34.634                    | 37.073         | 14.585              | 16.190              | 12.746       | 2.947          |
| 43384  | 77.523 | 34.404                    | 33.945         | 16.046              | 15.170              | 13.188       | 2.659          |
| 43386  | 75.238 | 33.333                    | 32.857         | 15.819              | 15.633              | 17.400       | 2.904          |
| MEAN   | 80.365 | 33.873                    | 33.432         | 14.575              | 14.906              | 14.718       | 2.832          |
| S.D.   | 7.2233 | 1.1361                    | 2.4588         | 1.3879              | 1.2099              | 2.7546       | 0.2256         |
| N      | 10     | 10                        | 10             | 10                  | 10                  | 10           | 10             |

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS  | MALE GROUP: 300 MG/KG/DAY |                |                     |                     |              |                |
|--------|---------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |         | LT EPI DIDYMIS            | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43323  | 76.214  | 25.728                    | 28.641         | 11.816              | 11.743              | 10.859       | 2.160          |
| 43331  | 80.203  | 39.594                    | 41.624         | 19.731              | 16.802              | 13.401       | 2.137          |
| 43341  | 101.036 | 34.715                    | 37.824         | 15.140              | 17.850              | 14.938       | 2.456          |
| 43355  | 77.500  | 31.000                    | 29.500         | 14.795              | 14.525              | 19.090       | 3.575          |
| 43361  | 79.724  | 32.258                    | 28.111         | 15.931              | 12.558              | 9.986        | 2.544          |
| 43363  | 70.647  | 32.836                    | 26.368         | 14.925              | 10.846              | 19.433       | 2.229          |
| 43383  | 88.832  | 37.563                    | 35.533         | 15.005              | 16.812              | 14.442       | 2.975          |
| 43385  | 77.551  | 32.143                    | 29.082         | 13.791              | 15.077              | 11.036       | 2.740          |
| 43388  | 79.439  | 32.710                    | 37.850         | 12.902              | 16.790              | 12.907       | 2.977          |
| 43392  | 81.683  | 33.663                    | 33.168         | 15.129              | 13.995              | 13.757       | 2.718          |
| MEAN   | 81.283  | 33.221                    | 32.770         | 14.917              | 14.700              | 13.985       | 2.651          |
| S.D.   | 8.3092  | 3.7338                    | 5.1808         | 2.0887              | 2.4043              | 3.2124       | 0.4485         |
| N      | 10      | 10                        | 10             | 10                  | 10                  | 10           | 10             |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 1000 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|----------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | LT EPI DIDYMIS             | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43297  | 80.000 | 29.500                     | 31.000         | 13.185              | 14.265              | 9.135        | 2.945          |
| 43325  | 69.951 | 31.034                     | 30.049         | 12.951              | 12.842              | 10.438       | 2.547          |
| 43328  | 88.442 | 36.181                     | 35.176         | 17.814              | 14.894              | 14.151       | 3.382          |
| 43346  | 93.299 | 37.629                     | 37.113         | 16.533              | 17.227              | 10.954       | 2.474          |
| 43362  | 80.100 | 32.338                     | 34.328         | 12.522              | 15.935              | 14.642       | 2.776          |
| 43372  | 76.526 | 35.211                     | 33.803         | 14.94               | 15.662              | 14.324       | 3.019          |
| 43373  | 62.051 | 36.923                     | 29.744         | 19.205              | 13.277              | 14.938       | 0.751          |
| 43377  | 77.723 | 33.168                     | 30.693         | 12.421              | 13.416              | 12.955       | 2.841          |
| 43397  | 87.701 | 40.107                     | 37.433         | 19.214              | 16.829              | 15.385       | 3.011          |
| MEAN   | 79.533 | 34.677                     | 33.260         | 15.427              | 14.927              | 12.991       | 2.812          |
| S.D.   | 9.6558 | 3.4207                     | 2.9945         | 2.8405              | 1.5912              | 2.2613       | 0.3282         |
| N      | 9      | 9                          | 9              | 9                   | 9                   | 9            | 9              |

PAGE 8  
WEEK 13

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | FEMALE GROUP: 0 MG./KG./DAY |         |             |         |        |         |                      |                 |                   |                   |
|--------|---------|-----------------------------|---------|-------------|---------|--------|---------|----------------------|-----------------|-------------------|-------------------|
|        |         | BRAIN WT<br>(GRAMS)         | LIVER   | KID<br>NEYS | HEART   | SPLEEN | UTER    | OVARIES/<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/PARA |
| 43433  | 290.    | 1.82                        | 482.967 | 118.132     | 66.484  | 25.275 | 42.308  | 7.654                | 13.940          | 4.445             | 1.154             |
| 43435  | 315.    | 2.01                        | 433.831 | 111.940     | 49.751  | 28.856 | 61.194  | 7.512                | 17.905          | 2.751             | 0.915             |
| 43436  | 299.    | 1.87                        | 456.684 | 121.390     | 66.310  | 33.690 | 44.920  | 8.898                | 13.503          | 4.182             | 1.070             |
| 43438  | 278.    | 1.77                        | 388.701 | 107.345     | 59.322  | 27.119 | 51.977  | 7.672                | 16.768          | 3.684             | 0.847             |
| 43449  | 260.    | 1.86                        | 375.806 | 96.237      | 45.699  | 23.118 | 45.699  | 6.806                | 10.102          | 3.398             | 0.774             |
| 43467  | 294.    | 2.01                        | 445.274 | 132.836     | 54.229  | 31.343 | 28.856  | 7.557                | 15.915          | 4.030             | 0.940             |
| 43474  | 229.    | 1.68                        | 397.619 | 111.310     | 53.571  | 26.190 | 25.595  | 7.095                | 11.000          | 3.964             | 0.899             |
| 43483  | 265.    | 1.90                        | 430.000 | 102.632     | 56.316  | 20.526 | 30.000  | 7.205                | 10.616          | 3.779             | 1.158             |
| 43497  | 287.    | 1.85                        | 442.703 | 109.189     | 57.838  | 30.270 | 61.081  | 11.081               | 8.865           | 4.200             | 0.686             |
| 43501  | 295.    | 1.80                        | 517.222 | 113.333     | 82.222  | 27.222 | 42.222  | 5.739                | 14.994          | 3.878             | 0.778             |
| MEAN   | 281.    | 1.86                        | 437.081 | 112.434     | 59.174  | 27.361 | 43.385  | 7.722                | 13.361          | 3.831             | 0.922             |
| S.D.   | 24.4    | 0.101                       | 43.1075 | 10.1439     | 10.3910 | 3.9034 | 12.5558 | 1.4211               | 3.0866          | 0.4801            | 0.1620            |
| N      | 10      | 10                          | 10      | 10          | 10      | 10     | 10      | 10                   | 10              | 10                | 10                |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 100 MG/KG/DAY |         |                     |         |              |        |        |               |                      |                 |                   |                               |
|-----------------------------|---------|---------------------|---------|--------------|--------|--------|---------------|----------------------|-----------------|-------------------|-------------------------------|
| ANIMAL                      | FBW (G) | BRAIN WT<br>(GRAMS) | LIVER   | KID<br>NEY'S | HEART  | SPLEEN | UTER<br>US/CX | OVARIES/<br>OVIDUCTS | THYMUS<br>GLAND | ADRENAL<br>GLANDS | THYROIDS<br>/ PARA<br>THYROID |
| 43420                       | 260.    | 1.77                | 623.164 | 122.599      | 53.672 | 27.119 | 40.678        | 6.141                | 16.294          | 4.203             | 0.859                         |
| 43439                       | 266.    | 1.91                | 462.304 | 87.435       | 43.455 | 21.990 | 24.084        | 7.152                | 13.283          | 3.136             | 1.220                         |
| 43458                       | 236.    | 1.83                | 455.191 | 93.989       | 56.284 | 21.858 | 30.055        | 7.393                | 15.601          | 3.508             | 0.891                         |
| 43462                       | 228.    | 1.75                | 460.000 | 97.714       | 50.857 | 26.857 | 25.143        | 6.669                | 18.120          | 3.211             | 0.889                         |
| 43468                       | 294.    | 1.90                | 539.474 | 116.842      | 65.263 | 29.474 | 31.579        | 4.721                | 15.816          | 3.532             | 1.526                         |
| 43486                       | 297.    | 1.88                | 572.340 | 106.383      | 58.511 | 25.000 | 40.957        | 8.511                | 12.718          | 4.165             | 0.888                         |
| 43489                       | 295.    | 1.88                | 547.872 | 114.362      | 63.830 | 30.319 | 45.745        | 7.888                | 11.851          | 4.484             | 1.011                         |
| 43502                       | 274.    | 1.80                | 528.333 | 104.444      | 62.222 | 27.222 | 28.333        | 6.117                | 11.939          | 4.728             | 1.433                         |
| 43511                       | 304.    | 1.85                | 544.324 | 119.459      | 57.838 | 28.108 | 29.730        | 9.514                | 18.049          | 4.135             | 0.903                         |
| 43515                       | 316.    | 1.81                | 667.956 | 118.232      | 64.088 | 29.834 | 49.171        | 6.414                | 15.840          | 4.138             | 0.912                         |
| MEAN                        | 277.    | 1.84                | 540.096 | 108.146      | 57.602 | 26.778 | 34.548        | 7.051                | 14.951          | 3.924             | 1.063                         |
| S.D.                        | 29.4    | 0.055               | 70.0643 | 12.0548      | 6.8685 | 3.0097 | 8.8610        | 1.3622               | 2.3536          | 0.5418            | 0.2437                        |
| N                           | 10      |                     | 10      | 10           | 10     | 10     | 10            | 10                   | 10              | 10                | 10                            |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 300 MG/KG/DAY |         |                     |         |              |        |        |               |                      |                 |
|-----------------------------|---------|---------------------|---------|--------------|--------|--------|---------------|----------------------|-----------------|
| ANIMAL                      | FBW (G) | BRAIN WT<br>(GRAMS) |         | KID<br>NEY'S | HEART  | SPLEEN | UTER<br>US/CX | OVARIES/<br>OVIDUCTS | THYMOS<br>GLAND |
|                             |         | BRAIN WT            | LIVER   |              |        |        |               |                      |                 |
| 43463                       | 246.    | 1.69                | 523.669 | 104.734      | 50.296 | 27.811 | 26.627        | 7.615                | 6.343           |
| 43475                       | 308.    | 1.90                | 503.158 | 100.000      | 55.789 | 26.842 | 30.526        | 7.111                | 11.463          |
| 43478                       | 359.    | 1.93                | 664.249 | 106.736      | 60.104 | 29.016 | 31.088        | 4.845                | 16.187          |
| 43491                       | 308.    | 1.73                | 550.289 | 114.451      | 60.694 | 23.121 | 49.711        | 7.578                | 15.676          |
| 43495                       | 316.    | 1.96                | 557.653 | 98.469       | 53.571 | 20.918 | 34.694        | 6.240                | 11.821          |
| 43508                       | 276.    | 1.88                | 651.579 | 133.158      | 67.368 | 43.158 | 43.684        | 5.505                | 12.900          |
| 43513                       | 300.    | 1.96                | 508.163 | 108.511      | 54.255 | 31.383 | 30.319        | 8.745                | 14.723          |
| 43516                       | 304.    | 1.77                | 684.181 | 138.983      | 59.322 | 26.554 | 48.588        | 9.842                | 22.286          |
| 43517                       | 276.    | 1.90                | 492.632 | 104.737      | 54.737 | 32.632 | 33.684        | 6.463                | 13.068          |
| MEAN                        | 297.    | 1.86                | 569.302 | 111.437      | 57.787 | 29.817 | 35.851        | 6.996                | 14.446          |
| S.D.                        | 30.8    | 0.097               | 71.2531 | 13.7678      | 4.9801 | 6.5355 | 8.3508        | 1.5114               | 4.5044          |
| N                           | 10      |                     | 10      | 10           | 10     | 10     | 10            | 10                   | 10              |

FBW = FINAL BODY WEIGHT

PAGE 11  
WEEK 13

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 126 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 1000 MG/KG/DAY |         |                     |         |         |              |        |        |               |                      |
|------------------------------|---------|---------------------|---------|---------|--------------|--------|--------|---------------|----------------------|
| ANIMAL                       | FBW (G) | BRAIN WT<br>(GRAMS) |         | LIVER   | KID<br>NEY'S | HEART  | SPLEEN | UTER<br>US/CX | OVARIES/<br>OVIDUCTS |
|                              |         | BRAIN WT            | NEYS    |         |              |        |        |               |                      |
| 43440                        | 268.    | 1.77                | 667.232 | 111.299 | 54.237       | 20.904 | 23.164 | 7.808         | 14.960               |
| 43456                        | 370.    | 1.78                | 844.382 | 126.404 | 74.157       | 36.517 | 30.899 | 7.309         | 15.090               |
| 43460                        | 234.    | 1.91                | 516.230 | 90.576  | 53.403       | 25.131 | 29.319 | 7.550         | 7.199                |
| 43466                        | 333.    | 1.82                | 792.857 | 129.121 | 66.484       | 31.319 | 28.022 | 9.066         | 12.192               |
| 43477                        | 270.    | 1.87                | 632.620 | 113.904 | 54.011       | 41.711 | 41.176 | 6.545         | 13.695               |
| 43479                        | 274.    | 1.86                | 690.323 | 122.043 | 51.613       | 23.118 | 46.774 | 9.769         | 3.582                |
| 43481                        | 342.    | 1.92                | 725.000 | 119.271 | 61.979       | 24.479 | 41.146 | 7.651         | 3.668                |
| 43484                        | 286.    | 1.90                | 598.947 | 97.368  | 55.789       | 27.368 | 22.632 | 6.789         | 11.683               |
| 43492                        | 252.    | 1.83                | 671.038 | 107.104 | 57.377       | 32.240 | 27.869 | 9.322         | 3.317                |
| 43503                        | 262.    | 1.66                | 653.012 | 103.012 | 54.819       | 23.494 | 48.795 | 9.036         | 13.073               |
| MEAN                         | 289.    | 1.83                | 679.164 | 112.010 | 58.387       | 28.628 | 33.980 | 8.085         | 12.420               |
| S.D.                         | 44.1    | 0.080               | 93.3866 | 12.6328 | 7.1083       | 6.6758 | 9.6386 | 1.1273        | 3.825                |
| N                            | 10      | 10                  | 10      | 10      | 10           | 10     | 10     | 10            | 10                   |

FBW = FINAL BODY WEIGHT

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PROJECT NO. :WTL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

|        |         | MALE GROUP: 0 MG/KG/DAY |             |         |         |
|--------|---------|-------------------------|-------------|---------|---------|
|        |         | BRAIN WT<br>(GRAMS)     | KID<br>NEYS | HEART   | SPLEEN  |
| ANIMAL | FBW (G) | LIVER                   |             |         |         |
| 43289  | 561.    | 1.99                    | 755.779     | 181.407 | 31.156  |
| 43295  | 574.    | 1.98                    | 786.869     | 205.051 | 81.313  |
| 43308  | 554.    | 1.91                    | 781.152     | 184.817 | 88.482  |
| 43316  | 511.    | 2.17                    | 609.217     | 152.074 | 67.281  |
| 43326  | 509.    | 1.80                    | 731.667     | 155.556 | 89.444  |
| MEAN   | 542.    | 1.97                    | 732.937     | 175.781 | 83.795  |
| S.D.   | 29.9    | 0.135                   | 72.5662     | 22.0290 | 10.0979 |
| N      | 5       | 5                       | 5           | 5       | 5       |

FBW = FINAL BODY WEIGHT

PAGE 1  
WEEK 17

PROJECT NO. WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| MALE GROUP: 100 MG/KG/DAY |         |                  |                     |                     |                    |        |
|---------------------------|---------|------------------|---------------------|---------------------|--------------------|--------|
| ANIMAL                    | FBW (G) | BRAIN WT (GRAMS) | LIVER               | KIDNEY              | HEART              | SPLEEN |
| 43285                     | 601.    | 2.11             | 822.275             | 183.412             | 81.517             | 36.967 |
| 43293                     | 571.    | 2.13             | 800.939             | 204.225             | 84.507             | 37.089 |
| 43311                     | 475.    | 2.14             | 658.879             | 165.888             | 72.897             | 38.785 |
| 43320                     | 473.    | 1.95             | 671.282             | 181.538             | 75.385             | 34.872 |
| 43340                     | 377.    | 2.01             | 597.015             | 142.289             | 73.134             | 32.338 |
| MEAN                      | 499.    | 2.07             | 710.078             | 175.470             | 77.488             | 36.010 |
| S.D.                      | 89.1    | 0.084            | 97.151 <sup>4</sup> | 23.019 <sup>2</sup> | 5.243 <sup>0</sup> | 6.113  |
| N                         | 5       | 5                | 5                   | 5                   | 5                  | 5      |

FBW = FINAL BODY WEIGHT

PAGE 2  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN WT<br>(GRAMS) |                      | LIVER    |  | KIDNEY  |  | HEART  |  | SPLEEN |  | PROSTATE |  | TESTIS |  |
|--------|---------|---------------------|----------------------|----------|--|---------|--|--------|--|--------|--|----------|--|--------|--|
|        |         | MALE                | GROUP: 300 MG/KG/DAY |          |  |         |  |        |  |        |  |          |  |        |  |
| 43290  | 475.    | 2.01                |                      | 648.259  |  | 165.174 |  | 72.637 |  | 34.826 |  | 24.876   |  | 73.134 |  |
| 43307  | 540.    | 2.02                |                      | 826.238  |  | 207.426 |  | 84.158 |  | 34.653 |  | 59.006   |  | 78.713 |  |
| 43309  | 601.    | 2.05                |                      | 870.732  |  | 231.707 |  | 89.756 |  | 43.902 |  | 60.976   |  | 93.171 |  |
| 43318  | 583.    | 1.99                |                      | 812.060  |  | 201.005 |  | 89.950 |  | 45.729 |  | 69.849   |  | 78.392 |  |
| 43322  | 488.    | 2.18                |                      | 668.807  |  | 159.174 |  | 74.312 |  | 39.450 |  | 45.413   |  | 76.606 |  |
| MEAN   | 537.    | 2.05                |                      | 765.219  |  | 192.897 |  | 82.163 |  | 39.712 |  | 52.104   |  | 80.003 |  |
| S.D.   | 55.8    | 0.076               |                      | 100.0316 |  | 30.3680 |  | 8.2863 |  | 5.0817 |  | 17.5574  |  | 7.6873 |  |
| N      | 5       | 5                   |                      | 5        |  | 5       |  | 5      |  | 5      |  | 5        |  | 5      |  |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | FBW (G) | BRAIN WT<br>(GRAMS) | MALE GROUP: 1000 MG/KG/DAY |         |         | MALE GROUP: 1000 MG/KG/DAY |        |        |
|--------|---------|---------------------|----------------------------|---------|---------|----------------------------|--------|--------|
|        |         |                     | LIVER                      | KIDNEY  | HEART   | PROSTATE                   | TESTIS |        |
| 43277  | 493.    | 1.92                | 704.688                    | 168.750 | 80.208  | 28.125                     | 67.188 | 78.125 |
| 43278  | 479.    | 1.91                | 650.262                    | 176.963 | 91.099  | 27.749                     | 72.251 | 76.440 |
| 43280  | 598.    | 1.95                | 915.897                    | 218.974 | 91.795  | 40.000                     | 54.872 | 87.692 |
| 43281  | 513.    | 2.18                | 706.881                    | 179.358 | 73.394  | 35.321                     | 45.872 | 66.972 |
| 43282  | 398.    | 1.88                | 597.340                    | 175.000 | 66.489  | 35.106                     | 35.106 | 90.426 |
| MEAN   | 496.    | 1.97                | 715.014                    | 183.809 | 80.597  | 33.260                     | 55.058 | 79.931 |
| S.D.   | 71.8    | 0.121               | 121.0028                   | 20.0476 | 11.0313 | 5.2398                     | 15.088 | 9.4043 |
| N      | 5       | 5                   | 5                          | 5       | 5       | 5                          | 5      | 5      |

FBW = FINAL BODY WEIGHT

PAGE 4  
WEEK 17

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | TESTIS | MALE GROUP: 0 MG/KG/DAY |                |                     |                     |              |                |
|--------|--------|-------------------------|----------------|---------------------|---------------------|--------------|----------------|
|        |        | RT EPI DIDYMIS          | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43289  | 85.930 | 37.688                  | 39.196         | 17.809              | 18.271              | 10.422       | 2.714          |
| 43295  | 86.364 | 37.374                  | 36.364         | 15.187              | 15.793              | 16.712       | 3.212          |
| 43308  | 70.681 | 38.743                  | 37.173         | 17.162              | 17.487              | 14.869       | 2.979          |
| 43316  | 76.037 | 32.719                  | 33.641         | 13.194              | 13.654              | 19.488       | 3.793          |
| 43326  | 77.778 | 34.444                  | 29.444         | 13.433              | 13.083              | 16.661       | 3.967          |
| MEAN   | 79.358 | 36.194                  | 35.164         | 15.357              | 15.658              | 15.630       | 3.333          |
| S.D.   | 6.7285 | 2.5130                  | 3.7673         | 2.1024              | 2.2824              | 3.3474       | 0.5331         |
| N      | 5      | 5                       | 5              | 5                   | 5                   | 5            | 5              |

PAGE 5  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL                               | TESTIS  | MALE GROUP: 100 MG/KG/DAY |                |                     |                     |              |                |
|--------------------------------------|---------|---------------------------|----------------|---------------------|---------------------|--------------|----------------|
|                                      |         | LT EPI DIDYMIS            | RT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS |
| 43285                                | 83.412  | 34.597                    | 35.071         | 15.469              | 16.981              | 13.938       | 3.251          |
| 43293                                | 74.178  | 33.803                    | 38.028         | 15.136              | 19.211              | 12.545       | 2.859          |
| 43311                                | 78.972  | 38.785                    | 35.981         | 16.626              | 16.075              | 11.042       | 3.215          |
| 43320                                | 72.821  | 30.769                    | 31.795         | 12.749              | 15.097              | 7.092        | 2.697          |
| 43340                                | 51.741  | 2.985                     | 26.368         | NA                  | 10.184              | 9.647        | 3.562          |
| MEAN                                 | 72.225  | 28.188                    | 33.449         | 14.995              | 15.510              | 10.853       | 3.117          |
| S.D.                                 | 12.1905 | 14.3767                   | 4.5521         | 1.6278              | 3.3436              | 2.6465       | 0.3423         |
| N                                    | 5       | 5                         | 5              | 5                   | 5                   | 5            | 5              |
| NA = ORGAN NOT POSITIVELY IDENTIFIED |         |                           |                |                     |                     |              |                |

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 300 MG/KG/DAY |                |                |                     |                     |              |                |                 |
|--------|---------------------------|----------------|----------------|---------------------|---------------------|--------------|----------------|-----------------|
|        | LT TESTIS                 | RT EPI DIDYMIS | LT EPI DIDYMIS | RT CAUDA EPIDIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND | ADRENAL GLANDS | THYROIDS / PARA |
| 43290  | 75.622                    | 34.328         | 34.328         | 14.388              | 15.811              | 14.463       | 3.234          | 1.741           |
| 43307  | 80.198                    | 32.673         | 34.653         | 14.129              | 15.356              | 18.213       | 2.653          | 1.426           |
| 43309  | 96.585                    | 40.976         | 39.024         | 20.434              | 19.673              | 18.244       | 2.732          | 1.556           |
| 43318  | 76.382                    | 37.186         | 31.156         | 15.015              | 13.136              | 9.387        | 2.437          | 1.035           |
| 43322  | 75.229                    | 33.486         | 35.780         | 15.115              | 17.454              | 13.147       | 2.812          | 1.110           |
| MEAN   | 80.803                    | 35.730         | 34.988         | 15.816              | 16.286              | 14.691       | 2.774          | 1.374           |
| S.D.   | 9.0401                    | 3.3907         | 2.8350         | 2.6146              | 2.4418              | 3.7282       | 0.2928         | 0.2980          |
| N      | 5                         | 5              | 5              | 5                   | 5                   | 5            | 5              | 5               |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| ANIMAL | MALE GROUP: 1000 MG/KG/DAY |                |                |                     |              |
|--------|----------------------------|----------------|----------------|---------------------|--------------|
|        | LT TESTIS                  | RT EPI DIDYMIS | LT EPI DIDYMIS | LT CAUDA EPIDIDYMIS | THYMUS GLAND |
| 43277  | 81.250                     | 36.458         | 35.938         | 16.016              | 13.557       |
| 43278  | 75.916                     | 37.696         | 35.079         | 15.366              | 9.120        |
| 43280  | 89.744                     | 37.949         | 37.436         | 13.862              | 15.574       |
| 43281  | 66.972                     | 29.817         | 33.028         | 15.486              | 16.867       |
| 43282  | 87.234                     | 35.106         | 34.574         | 12.138              | 15.351       |
| MEAN   | 80.223                     | 35.405         | 35.211         | 14.574              | 15.612       |
| S.D.   | 9.1515                     | 3.3221         | 1.6331         | 1.5795              | 0.7419       |
| N      | 5                          | 5              | 5              | 5                   | 5            |

|  | ADRENAL GLANDS | THYROID GLANDS / PARA |
|--|----------------|-----------------------|
|  |                |                       |
|  | 2.182          | 1.760                 |
|  | 2.445          | 1.293                 |
|  | 3.067          | 1.097                 |
|  | 3.587          | 1.518                 |
|  | 2.426          | 1.441                 |
|  | 0.5747         | 0.2480                |
|  | 5              | 5                     |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 0 MG/KG/DAY |         |          |         |         |        |        |                    |
|---------------------------|---------|----------|---------|---------|--------|--------|--------------------|
| ANIMAL                    | FBW (G) | BRAIN WT | KID     | HEART   | SPLEEN | UTER   | OVARIES / OVIDUCTS |
|                           |         | (GRAMS)  | NEYS    |         | US/CX  | US     | GLAND              |
| 43398                     | 243.    | 1.86     | 386.559 | 106.989 | 45.161 | 25.806 | 65.591             |
| 43405                     | 326.    | 1.86     | 454.301 | 118.280 | 61.828 | 24.731 | 27.419             |
| 43409                     | 267.    | 1.84     | 448.913 | 97.826  | 57.609 | 24.457 | 52.717             |
| 43423                     | 269.    | 1.88     | 389.362 | 94.681  | 50.532 | 27.128 | 38.830             |
| 43432                     | 301.    | 1.98     | 467.172 | 103.030 | 62.626 | 25.253 | 22.727             |
| MEAN                      | 281.    | 1.88     | 429.261 | 104.161 | 55.551 | 25.475 | 41.457             |
| S.D.                      | 32.4    | 0.055    | 38.2944 | 9.2009  | 7.5305 | 1.0584 | 6.607              |
| N                         | 5       | 5        | 5       | 5       | 5      | 5      | 5                  |

FBW = FINAL BODY WEIGHT

PAGE 9  
WEEK 17

PROJECT NO. :WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 100 MG/KG/DAY |                     |       |             |         |        |               |                       |
|-----------------------------|---------------------|-------|-------------|---------|--------|---------------|-----------------------|
|                             | BRAIN WT<br>(GRAMS) | LIVER | KID<br>NEYS | HEART   | SPLEEN | UTER<br>US/CX | OVARIES /<br>OVIDUCTS |
| 43400                       | 313.                | 1.98  | 410.101     | 97.980  | 55.556 | 32.828        | 39.899                |
| 43407                       | 242.                | 1.85  | 400.541     | 105.405 | 48.649 | 25.405        | 7.030                 |
| 43413                       | 282.                | 1.91  | 367.539     | 85.864  | 48.691 | 24.084        | 27.568                |
| 43416                       | 287.                | 1.90  | 380.000     | 85.263  | 55.263 | 28.421        | 28.272                |
| 43419                       | 239.                | 1.89  | 426.984     | 102.116 | 50.794 | 30.159        | 25.263                |
| MEAN                        | 273.                | 1.91  | 397.033     | 95.326  | 51.791 | 28.179        | 29.174                |
| S.D.                        | 31.6                | 0.047 | 23.6652     | 9.2942  | 3.4171 | 3.5315        | 7.327                 |
| N                           | 5                   | 5     | 5           | 5       | 5      | 5             | 5                     |

FBW = FINAL BODY WEIGHT

PAGE 10  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 300 MG/KG/DAY |         |                  |         |         |        |        |                    |              |                |                 |
|-----------------------------|---------|------------------|---------|---------|--------|--------|--------------------|--------------|----------------|-----------------|
| ANIMAL                      | FBW (G) | BRAIN WT (GRAMS) | KIDNEY  |         |        | UTERUS |                    |              | ADRENAL GLANDS | THYROIDS / PARA |
|                             |         |                  | LIVER   | NEYS    | HEART  | SPLEEN | OVARYES / OVIDUCTS | THYMUS GLAND |                |                 |
| 43402                       | 323.    | 1.95             | 591.795 | 135.897 | 66.154 | 31.795 | 39.487             | 4.810        | 10.954         | 4.467           |
| 43426                       | 235.    | 1.85             | 368.649 | 94.595  | 45.946 | 21.081 | 32.973             | 8.405        | 12.130         | 4.157           |
| 43442                       | 285.    | 2.03             | 476.355 | 110.837 | 52.709 | 29.557 | 35.961             | 8.281        | 4.365          | 2.596           |
| 43446                       | 227.    | 1.78             | 408.427 | 106.742 | 52.247 | 27.528 | 55.618             | 8.854        | 10.787         | 3.191           |
| 43461                       | 295.    | 1.82             | 482.418 | 110.989 | 58.791 | 36.813 | 30.769             | 7.390        | 11.533         | 4.209           |
| MEAN                        | 273.    | 1.89             | 465.529 | 111.812 | 55.169 | 29.355 | 38.962             | 7.548        | 9.954          | 3.724           |
| S.D.                        | 40.9    | 0.102            | 85.1351 | 15.0320 | 7.6394 | 5.7752 | 9.8704             | 1.6201       | 3.1686         | 0.7955          |
| N                           | 5       | 5                | 5       | 5       | 5      | 5      | 5                  | 5            | 5              | 5               |

FBW = FINAL BODY WEIGHT

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 127 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
ORGAN WEIGHTS RELATIVE TO BRAIN WEIGHTS (GRAMS/100 GRAMS)

| FEMALE GROUP: 1000 MG/KG/DAY |         |                  |         |         |        |        |                    |
|------------------------------|---------|------------------|---------|---------|--------|--------|--------------------|
| ANIMAL                       | FBW (G) | BRAIN WT (GRAMS) | LIVER   | KIDNEY  | HEART  | SPLEEN | UTERUS/CX OVIDUCTS |
| 43401                        | 328.    | 1.83             | 586.339 | 140.437 | 73.224 | 27.369 | 46.448             |
| 43410                        | 231.    | 1.79             | 376.536 | 89.944  | 50.838 | 24.022 | 32.402             |
| 43421                        | 297.    | 1.90             | 511.053 | 106.316 | 60.000 | 28.947 | 32.632             |
| 43429                        | 279.    | 2.01             | 474.129 | 103.483 | 58.706 | 27.861 | 25.373             |
| 43430                        | 279.    | 1.88             | 473.404 | 118.617 | 59.574 | 34.574 | 55.319             |
| MEAN                         | 283.    | 1.88             | 484.292 | 111.759 | 60.468 | 28.655 | 38.435             |
| S.D.                         | 35.2    | 0.083            | 75.7676 | 18.9965 | 8.0557 | 3.8024 | 12.1446            |
| N                            | 5       | 5                | 5       | 5       | 5      | 5      | 5                  |

FBW = FINAL BODY WEIGHT

P0FBW4.05  
11/17/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 128 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| ANIMAL | LEFT   |            | LEFT   |            |
|--------|--------|------------|--------|------------|
|        | TESTIS | EPIDIDYMIS | TESTIS | EPIDIDYMIS |
| 43332  | 126.3  | 535.2      |        |            |
| 43334  | 117.6  | 632.3      |        |            |
| 43336  | 83.3   | 491.1      |        |            |
| 43339  | 135.2  | 733.9      |        |            |
| 43349  | 89.0   | 593.2      |        |            |
| 43365  | 0.0 A  | 0.0 A      |        |            |
| 43368  | 97.1   | 725.3      |        |            |
| 43369  | 98.6   | 800.5      |        |            |
| 43379  | 75.6   | 713.3      |        |            |
| 43391  | 162.4  | 696.9      |        |            |
| MEAN   | 109.5  | 658.0      |        |            |
| S.D.   | 28.14  | 101.83     |        |            |
| N      | 9      | 9          |        |            |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 128 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| ANIMAL | LEFT TESTIS | LEFT EPIDIDYMIS |                      |
|--------|-------------|-----------------|----------------------|
|        |             | MALE            | GROUP: 100 MG/KG/DAY |
| 43342  | 122.8       |                 |                      |
| 43350  | 92.1        | 431.7           |                      |
| 43351  | 99.4        | 576.4           |                      |
| 43354  | 107.4       | 495.2           |                      |
| 43364  | 88.7        | 691.9           |                      |
| 43371  | 78.8        | 825.5           |                      |
| 43380  | 86.8        | 735.1           |                      |
| 43382  | 104.1       | 681.7           |                      |
| 43384  | 82.7        | 599.5           |                      |
| 43386  | 110.9       | 767.3           |                      |
| MEAN   | 97.4        | 648.9           |                      |
| S.D.   | 13.96       | 61              |                      |
| N      | 10          | 122.61          | 10                   |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 128 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCL IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| ANIMAL | LEFT<br>TESTIS | LEFT<br>EPIDIDYMIS |                      |
|--------|----------------|--------------------|----------------------|
|        |                | MALE               | GROUP: 300 MG/KG/DAY |
| 43323  | 127.7          | 754.2              |                      |
| 43331  | 76.3           | 608.5              |                      |
| 43341  | 71.7           | 767.6              |                      |
| 43355  | 220.2          | 1092.6             |                      |
| 43361  | 68.2           | 964.6              |                      |
| 43363  | 116.1          | 644.0              |                      |
| 43383  | 93.2           | 761.6              |                      |
| 43385  | 88.5           | 852.6              |                      |
| 43388  | 84.2           | 477.2              |                      |
| 43392  | 88.4           | 858.6              |                      |
| MEAN   | 103.5          | 778.2              |                      |
| S.D.   | 45.08          | 177.63             |                      |
| N      | 10             | 10                 |                      |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 128 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)  
HTM-IVOS

| ANIMAL | LEFT TESTIS | EPIDIDYMIS | LEFT EPIDIDYMIS |                       |          |
|--------|-------------|------------|-----------------|-----------------------|----------|
|        |             |            | MALE            | GROUP: 1000 MG/KG/DAY | HTM-IVOS |
| 43297  | 90.0        |            | 681.2           |                       |          |
| 43325  | 142.4       |            | 651.3           |                       |          |
| 43328  | 96.6        |            | 825.3           |                       |          |
| 43346  | 70.5        |            | 576.5           |                       |          |
| 43359  | B           |            | B               |                       |          |
| 43362  | 88.9        |            | 701.5           |                       |          |
| 43372  | 90.5        |            | 629.4           |                       |          |
| 43373  | 109.0       |            | 531.2           |                       |          |
| 43377  | 117.2       |            | 520.2           |                       |          |
| 43397  | 69.3        |            | 648.8           |                       |          |
| MEAN   | 97.2        |            | 640.6           |                       |          |
| S.D.   | 23.02       |            | 93.78           |                       |          |
| N      | 9           |            | 9               |                       |          |

B = ANIMAL DIED PRIOR TO SPERMATOGENIC EVALUATIONS

PAGE 4  
WEEK 13  
MANUALv1.0  
09/18/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 129 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)  
HTM-IVOS

| ANIMAL | LEFT TESTIS |
|--------|-------------|
| 43332  | 20.7        |
| 43334  | 19.3        |
| 43336  | 13.7        |
| 43339  | 22.2        |
| 43349  | 14.6        |
| 43365  | 0.0 A       |
| 43368  | 15.9        |
| 43369  | 16.2        |
| 43379  | 12.4        |
| 43391  | 26.6        |
| MEAN   | 18.0        |
| S.D.   | 4.60        |
| N      | 9           |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 129 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)  
HTM-IVOS

| ANIMAL | LEFT TESTIS |
|--------|-------------|
| 43342  | 20.1        |
| 43350  | 15.1        |
| 43351  | 16.3        |
| 43354  | 17.6        |
| 43364  | 14.5        |
| 43371  | 12.9        |
| 43380  | 14.2        |
| 43382  | 17.1        |
| 43384  | 13.6        |
| 43386  | 18.2        |
| MEAN   | 16.0        |
| S.D.   | 2.29        |
| N      | 10          |

PAGE 2  
WEEK 13

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

TABLE 129 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)

| ANIMAL | LEFT TESTIS |
|--------|-------------|
| 43323  | 20.9        |
| 43331  | 12.5        |
| 43341  | 11.8        |
| 43355  | 36.1        |
| 43361  | 11.2        |
| 43363  | 19.0        |
| 43383  | 15.3        |
| 43385  | 14.5        |
| 43388  | 13.8        |
| 43392  | 14.5        |
| MEAN   | 17.0        |
| S.D.   | 7.38        |
| N      | 10          |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 129 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)  
HTM-IVOS

| ANIMAL | LEFT TESTIS |
|--------|-------------|
| 43297  | 14.8        |
| 43325  | 23.3        |
| 43328  | 15.8        |
| 43346  | 11.6        |
| 43359  | B           |
| 43362  | 14.6        |
| 43372  | 14.8        |
| 43373  | 17.9        |
| 43377  | 19.2        |
| 43397  | 11.4        |
| MEAN   | 15.9        |
| S.D.   | 3.75        |
| N      | 9           |

B = ANIMAL DIED PRIOR TO SPERMATOGENIC EVALUATIONS

PAGE 4  
WEEK 13

MANUALV1.0  
09/18/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 130 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)  
HTM-IVOS

| ANIMAL | MOTILITY | SPERM |
|--------|----------|-------|
| 43332  | 93       |       |
| 43334  | 87       |       |
| 43336  | 89       |       |
| 43339  | 86       |       |
| 43349  | 83       |       |
| 43365  | 0 A      |       |
| 43368  | 91       |       |
| 43369  | 89       |       |
| 43379  | 86       |       |
| 43391  | 88       |       |
| MEAN   | 88.0     |       |
| S.D.   | 2.96     |       |
| N      | 9        |       |

A = MOTILITY UNABLE TO BE DETERMINED SINCE NO SPERM CELLS WERE PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 130 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

HTM-IVOS  
MALE GROUP: 100 MG/KG/DAY

| ANIMAL | MOTILE SPERM |
|--------|--------------|
| 43342  | 86           |
| 43350  | 88           |
| 43351  | 94           |
| 43354  | 90           |
| 43364  | 89           |
| 43371  | 90           |
| 43380  | 96           |
| 43382  | 87           |
| 43384  | 90           |
| 43386  | 89           |
| MEAN   | 89.9         |
| S.D.   | 3.04         |
| N      | 10           |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 130 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

HFM-IVOS

MALE GROUP: 300 MG/KG/DAY

| ANIMAL | SPERM |
|--------|-------|
| 43323  | 86    |
| 43331  | 83    |
| 43341  | 93    |
| 43355  | 92    |
| 43361  | 92    |
| 43363  | 89    |
| 43383  | 89    |
| 43385  | 89    |
| 43388  | 93    |
| 43392  | 90    |
| MEAN   | 89.6  |
| S.D.   | 3.20  |
| N      | 10    |

PAGE 3  
WEEK 13

PROJECT NO :WIL-186012  
SPONSOR:CMA-BFRIP

TABLE 130 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)  
HTM-IVOS

MALE GROUP : 1000 MG/KG/DAY

| ANIMAL | MOTILE SPERM |
|--------|--------------|
| 43297  | 84           |
| 43325  | 83           |
| 43328  | 89           |
| 43346  | 83           |
| 43359  | B            |
| 43362  | 87           |
| 43372  | 87           |
| 43373  | 92           |
| 43377  | 88           |
| 43397  | 83           |
| MEAN   | 86.2         |
| S.D.   | 3.19         |
| N      | 9            |

B = ANIMAL DIED PRIOR TO SPERMATOGENIC EVALUATIONS

PAGE 4  
WEEK 13

MANUALV1.0

09/19/2000

R:07/18/2001

TABLE 131 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

| ANIMAL | NORMAL | SEPARATED<br>FLAGELLUM | HEAD<br>ABSENT/<br>NORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD<br>ABSENT/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD | 0 MG/KG/DAY |
|--------|--------|------------------------|----------------------------------------|-------------------------------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------|-------------|
|        |        |                        |                                        |                                                       |                                           |                                                |                                               | MISSHAPEN   |
| 43332  | 99.5   | 0.5                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43334  | 100.0  | 0.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43336  | 100.0  | 0.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43339  | 98.0   | 2.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43349  | 100.0  | 0.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43345  | 0.0 A  | 0.0 A                  | 0.0 A                                  | 0.0 A                                                 | 0.0 A                                     | 0.0 A                                          | 0.0 A                                         | 0.0 A       |
| 43365  | 99.0   | 1.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43368  | 99.0   | 0.5                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43369  | 99.5   | 0.5                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43379  | 100.0  | 0.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| 43391  | 99.0   | 1.0                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| MEAN   | 99.4   | 0.6                    | 0.0                                    | 0.0                                                   | 0.0                                       | 0.0                                            | 0.0                                           | 0.0         |
| S.D.   | 0.68   | 0.68                   | 0.00                                   | 0.00                                                  | 0.00                                      | 0.00                                           | 0.00                                          | 0.00        |
| N      | 9      | 9                      | 9                                      | 9                                                     | 9                                         | 9                                              | 9                                             | 9           |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

TABLE 13.1 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

|        |        | 100 MG/KG/DAY                          |                                |                                |                                           |                                          |                                                |                                               |
|--------|--------|----------------------------------------|--------------------------------|--------------------------------|-------------------------------------------|------------------------------------------|------------------------------------------------|-----------------------------------------------|
| ANIMAL | NORMAL | HEAD                                   |                                | MISSHAPEN                      |                                           | DEGENERATIVE                             |                                                | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
|        |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | ABNORMAL<br>HEAD/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD/<br>ABNORMAL<br>FLAGELLUM |                                               |
| 43342  | 100.0  | 0.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43350  | 99.0   | 1.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43351  | 99.0   | 1.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43354  | 100.0  | 0.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43364  | 99.0   | 1.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43371  | 100.0  | 0.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43380  | 98.5   | 1.5                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43382  | 100.0  | 0.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43384  | 98.0   | 2.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| 43386  | 100.0  | 0.0                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| MEAN   | 99.4   | 0.7                                    | 0.0                            | 0.0                            | 0.0                                       | 0.0                                      | 0.0                                            | 0.0                                           |
| S.D.   | 0.75   | 0.75                                   | 0.00                           | 0.00                           | 0.00                                      | 0.00                                     | 0.00                                           | 0.00                                          |
| N      | 10     | 10                                     | 10                             | 10                             | 10                                        | 10                                       | 10                                             | 10                                            |

TABLE 131 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

| 300 MG/KG/DAY |        |                                        |                                |                                  |                                           |                                                |                                               |
|---------------|--------|----------------------------------------|--------------------------------|----------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------|
| ANIMAL        | NORMAL | HEAD                                   |                                | MISSHAPEN                        |                                           | DEGENERATIVE<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
|               |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM |                                                |                                               |
| 43323         | 99.5   | 0.5                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43331         | 97.0   | 1.5                                    | 1.5                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43341         | 98.5   | 1.0                                    | 0.5                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43355         | 100.0  | 0.0                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43361         | 100.0  | 0.0                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43363         | 100.0  | 0.0                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43383         | 99.5   | 0.5                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43385         | 99.5   | 0.5                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43388         | 100.0  | 0.0                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| 43392         | 100.0  | 0.0                                    | 0.0                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| MEAN          | 99.4   | 0.4                                    | 0.2                            | 0.0                              | 0.0                                       | 0.0                                            | 0.0                                           |
| S.D.          | 0.97   | 0.52                                   | 0.48                           | 0.00                             | 0.00                                      | 0.00                                           | 0.00                                          |
| N             | 10     | 10                                     | 10                             | 10                               | 10                                        | 10                                             | 10                                            |

TABLE 131 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

| ANIMAL | NORMAL | 1000 MG/KG/DAY                         |                                        |                                          |                                           |                                             |                                                      |
|--------|--------|----------------------------------------|----------------------------------------|------------------------------------------|-------------------------------------------|---------------------------------------------|------------------------------------------------------|
|        |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | HEAD<br>ABSENT/<br>NORMAL<br>FLAGELLUM | HEAD<br>ABSENT/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | DEGENERATIVE<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43297  | 100.0  | 0.0                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43325  | 99.5   | 0.5                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43328  | 99.5   | 0.0                                    | 0.5                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43346  | 100.0  | 0.0                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43359  | B      | B                                      | B                                      | B                                        | B                                         | B                                           | B                                                    |
| 43362  | 99.5   | 0.5                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43372  | 100.0  | 0.0                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43373  | 99.5   | 0.5                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43377  | 98.5   | 1.0                                    | 0.5                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| 43397  | 100.0  | 0.0                                    | 0.0                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| MEAN   | 99.6   | 0.3                                    | 0.1                                    | 0.0                                      | 0.0                                       | 0.0                                         | 0.0                                                  |
| S.D.   | 0.49   | 0.36                                   | 0.22                                   | 0.00                                     | 0.00                                      | 0.00                                        | 0.00                                                 |
| N      | 9      | 9                                      | 9                                      | 9                                        | 9                                         | 9                                           | 9                                                    |

B = ANIMAL DIED PRIOR TO SPERMATOGENIC EVALUATIONS

TABLE 132 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

| ANIMAL | NORMAL | SEPARATED<br>FLAGELLUM | HEAD<br>ABSENT/<br>NORMAL<br>FLAGELLUM | 0 MG/KG/DAY       |                                |                      | MISSHAPEN<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD/<br>NORMAL HEAD | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD/<br>NORMAL HEAD | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
|--------|--------|------------------------|----------------------------------------|-------------------|--------------------------------|----------------------|---------------------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------|-----------------------------------------------|
|        |        |                        |                                        | MISSHAPEN<br>HEAD | ABSENT/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD |                                             |                                      |                                           |                                      |                                               |
| 43332  | 199    | 1                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43334  | 200    | 0                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43336  | 200    | 0                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43339  | 196    | 4                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43349  | 200    | 0                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43365  | 0 A    | 0 A                    | 0 A                                    | 0 A               | 0 A                            | 0 A                  | 0 A                                         | 0 A                                  | 0 A                                       | 0 A                                  | 0 A                                           |
| 43368  | 198    | 2                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43369  | 199    | 1                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43379  | 200    | 0                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| 43391  | 198    | 2                      | 0                                      | 0                 | 0                              | 0                    | 0                                           | 0                                    | 0                                         | 0                                    | 0                                             |
| MEAN   | 198.9  | 1.1                    | 0.0                                    | 0.0               | 0.0                            | 0.0                  | 0.0                                         | 0.0                                  | 0.0                                       | 0.0                                  | 0.0                                           |
| S.D.   | 1.36   | 1.36                   | 0.00                                   | 0.00              | 0.00                           | 0.00                 | 0.00                                        | 0.00                                 | 0.00                                      | 0.00                                 | 0.00                                          |
| N      | 9      | 9                      | 9                                      | 9                 | 9                              | 9                    | 9                                           | 9                                    | 9                                         | 9                                    | 9                                             |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

TABLE 132 (WEEK 13 PRIMARY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

|        |        | 100 MG/KG/DAY             |                                |                                  |                              |                       |                                      |
|--------|--------|---------------------------|--------------------------------|----------------------------------|------------------------------|-----------------------|--------------------------------------|
| ANIMAL | NORMAL | HEAD                      |                                | MISSHAPEN                        |                              | DEGENERATIVE          |                                      |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>ABNORMAL<br>FLAGELLUM | HEAD/<br>NORMAL<br>FLAGELLUM | ABNORMAL<br>FLAGELLUM | FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43342  | 200    | 0                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43350  | 198    | 2                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43351  | 198    | 2                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43354  | 200    | 0                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43364  | 198    | 2                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43371  | 200    | 0                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43380  | 197    | 3                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43382  | 200    | 0                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43384  | 196    | 4                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| 43386  | 200    | 0                         | 0                              | 0                                | 0                            | 0                     | 0                                    |
| MEAN   | 198.7  | 1.3                       | 0.0                            | 0.0                              | 0.0                          | 0.0                   | 0.0                                  |
| S.D.   | 1.49   | 1.49                      | 0.00                           | 0.00                             | 0.00                         | 0.00                  | 0.00                                 |
| N      | 10     | 10                        | 10                             | 10                               | 10                           | 10                    | 10                                   |

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 132 (WEEK 13 PRIMARY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

|        |        | 300 MG/KG/DAY                          |                                |                                          |                              |                       |                                      |
|--------|--------|----------------------------------------|--------------------------------|------------------------------------------|------------------------------|-----------------------|--------------------------------------|
| ANIMAL | NORMAL | HEAD                                   |                                | MISSHAPEN                                |                              | DEGENERATIVE          |                                      |
|        |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | HEAD<br>ABSENT/<br>ABNORMAL<br>FLAGELLUM | HEAD/<br>NORMAL<br>FLAGELLUM | ABNORMAL<br>FLAGELLUM | FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43323  | 199    | 1                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43331  | 194    | 3                                      | 3                              | 0                                        | 0                            | 0                     | 0                                    |
| 43341  | 197    | 2                                      | 1                              | 0                                        | 0                            | 0                     | 0                                    |
| 43355  | 200    | 0                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43361  | 200    | 0                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43363  | 200    | 0                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43383  | 199    | 1                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43385  | 199    | 1                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43388  | 200    | 0                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| 43392  | 200    | 0                                      | 0                              | 0                                        | 0                            | 0                     | 0                                    |
| MEAN   | 198.8  | 0.8                                    | 0.4                            | 0.0                                      | 0.0                          | 0.0                   | 0.0                                  |
| S.D.   | 1.93   | 1.03                                   | 0.97                           | 0.00                                     | 0.00                         | 0.00                  | 0.00                                 |
| N      | 10     | 10                                     | 10                             | 10                                       | 10                           | 10                    | 10                                   |

PROJECT NO :WIL-186012  
 SPONSOR :CMA-BFRIP

TABLE 132 (WEEK 13 PRIMARY NEUROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

| ANIMAL | NORMAL | 1000 MG/KG/DAY                         |                                |                                          |                                           |                                                |                                             |
|--------|--------|----------------------------------------|--------------------------------|------------------------------------------|-------------------------------------------|------------------------------------------------|---------------------------------------------|
|        |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | HEAD<br>ABSENT/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>ABNORMAL<br>FLAGELLUM |
| 43297  | 200    | 0                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43325  | 199    | 1                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43328  | 199    | 0                                      | 1                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43346  | 200    | 0                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43359  | B      | B                                      | B                              | B                                        | B                                         | B                                              | B                                           |
| 43362  | 199    | 1                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43372  | 200    | 0                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43373  | 199    | 1                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43377  | 197    | 2                                      | 1                              | 0                                        | 0                                         | 0                                              | 0                                           |
| 43397  | 200    | 0                                      | 0                              | 0                                        | 0                                         | 0                                              | 0                                           |
| MEAN   | 199.2  | 0.6                                    | 0.2                            | 0.0                                      | 0.0                                       | 0.0                                            | 0.0                                         |
| S.D.   | 0.97   | 0.73                                   | 0.44                           | 0.00                                     | 0.00                                      | 0.00                                           | 0.00                                        |
| N      | 9      | 9                                      | 9                              | 9                                        | 9                                         | 9                                              | 9                                           |

B = ANIMAL DIED PRIOR TO SPERMATOGENIC EVALUATIONS

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 133 (WEEK 17 RECOVERY NCEOPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| ANIMAL | LEFT TESTIS | RIGHT TESTIS | LEFT EPIDIDYMIS | RIGHT EPIDIDYMIS |
|--------|-------------|--------------|-----------------|------------------|
| 43289  | 67.5        |              | 354.4           |                  |
| 43295  | 103.5       |              | 353.0           |                  |
| 43308  | 86.8        |              | 394.6           |                  |
| 43316  | 83.1        |              | 313.5           |                  |
| 43326  | 129.6       |              | 398.1           |                  |
| MEAN   | 94.1        |              | 362.7           |                  |
| S.D.   | 23.61       |              | 34.84           |                  |
| N      | 5           |              | 5               |                  |

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 133 (WEEK 17 RECOVERY NCROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| ANIMAL | LEFT   |            | LEFT<br>EPIDIDYMIS |
|--------|--------|------------|--------------------|
|        | TESTIS | EPIDIDYMIS |                    |
| 43285  | 102.6  | 480.8      |                    |
| 43293  | 94.5   | 364.3      |                    |
| 43311  | 193.5  | 386.9      |                    |
| 43320  | 55.0   | 388.2      |                    |
| 43340  | 0.0 A  | 0.0 A      |                    |
| MEAN   | 111.4  | 405.1      |                    |
| S.D.   | 58.55  | 51.68      |                    |
| N      | 4      | 4          |                    |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 133 (WEEK 17 RECOVERY NCROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)

| MALE GROUP: 300 MG/KG/DAY |             |                 |
|---------------------------|-------------|-----------------|
| ANIMAL                    | LEFT TESTIS | LEFT EPIDIDYMIS |
| 43290                     | 83.9        | 390.7           |
| 43307                     | 96.4        | 459.8           |
| 43309                     | 66.2        | 410.2           |
| 43318                     | 70.8        | 413.9           |
| 43322                     | 73.6        | 376.6           |
| MEAN                      | 78.2        | 410.2           |
| S.D.                      | 12.08       | 31.56           |
| N                         | 5           | 5               |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 133 (WEEK 17 RECOVERY NCROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL TESTICULAR AND EPIDIDYMAL SPERM NUMBERS  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE)  
HTM-IVOS

| ANIMAL | LEFT TESTIS | EPIDIDYMIS | LEFT EPIDIDYMIS |
|--------|-------------|------------|-----------------|
| 43277  | 70.1        | 458.2      |                 |
| 43278  | 110.7       | 420.5      |                 |
| 43280  | 101.2       | 298.7      |                 |
| 43281  | 77.3        | 330.0      |                 |
| 43282  | 83.6        | 460.6      |                 |
| MEAN   | 88.6        | 393.6      |                 |
| S.D.   | 16.90       | 74.89      |                 |
| N      | 5           | 5          |                 |

PAGE 4  
WEEK 17  
MANUALv1.0  
09/18/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

TABLE 134 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)

| ANIMAL | LEFT TESTIS | MALE GROUP: 0 MG/KG/DAY |
|--------|-------------|-------------------------|
| 43289  | 11.1        |                         |
| 43295  | 17.0        |                         |
| 43308  | 14.2        |                         |
| 43316  | 13.6        |                         |
| 43326  | 21.2        |                         |
| MEAN   | 15.4        |                         |
| S.D.   | 3.85        |                         |
| N      | 5           |                         |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 134 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)

| ANIMAL | LEFT TESTIS | MALE GROUP: 100 MG/KG/DAY |
|--------|-------------|---------------------------|
| 43285  | 16.8        |                           |
| 43293  | 15.5        |                           |
| 43311  | 31.7        |                           |
| 43320  | 9.0         |                           |
| 43340  | 0.0 A       |                           |
| MEAN   | 18.3        |                           |
| S.D.   | 9.59        |                           |
| N      | 4           |                           |

A = NO SPERM CELLS PRESENT; NOT INCLUDED IN CALCULATION OF MEAN

PROJECT NO. : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 134 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)

| ANIMAL | LEFT TESTIS | MALE GROUP: 300 MG/KG/DAY |
|--------|-------------|---------------------------|
| 43290  | 13.8        |                           |
| 43307  | 15.8        |                           |
| 43309  | 10.9        |                           |
| 43318  | 11.6        |                           |
| 43322  | 12.1        |                           |
| MEAN   | 12.8        |                           |
| S.D.   | 1.97        |                           |
| N      | 5           |                           |

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 134 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM PRODUCTION RATE  
(NO. OF SPERM IN MILLIONS/GRAM OF TISSUE/DAY)  
HTM-IVOS

| ANIMAL | LEFT TESTIS |
|--------|-------------|
| 43277  | 11.5        |
| 43278  | 18.1        |
| 43280  | 16.6        |
| 43281  | 12.7        |
| 43282  | 13.7        |
| MEAN   | 14.5        |
| S.D.   | 2.75        |
| N      | 5           |

MANUALv1.0  
09/18/2000  
R:07/18/2001

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

TABLE 135 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

| HTM-IVOS |              |
|----------|--------------|
| ANIMAL   | SPERM MOTILE |
| 43289    | 82           |
| 43295    | 6.9          |
| 43308    | 80           |
| 43316    | 58           |
| 43326    | 87           |
| MEAN     | 75.2         |
| S.D.     | 11.65        |
| N        | 5            |

PAGE 1  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 135 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

| HFM-IVOS                  |              |
|---------------------------|--------------|
| MALE GROUP: 100 MG/KG/DAY |              |
| ANIMAL                    | MOTILE SPERM |
| 43285                     | 79           |
| 43293                     | 87           |
| 43311                     | 90           |
| 43320                     | 73           |
| 43340                     | 55           |
| MEAN                      | 76.8         |
| S.D.                      | 13.90        |
| N                         | 5            |

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 135 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

HTM-IVOS  
MALE GROUP: 300 MG/KG/DAY

| ANIMAL | MOTILE SPERM |
|--------|--------------|
| 43290  | 51           |
| 43307  | 87           |
| 43309  | 76           |
| 43318  | 78           |
| 43322  | 77           |
| MEAN   | 73.8         |
| S.D.   | 13.48        |
| N      | 5            |

PAGE 3  
WEEK 17

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 135 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MOTILITY ASSESSMENT (PERCENTAGE)

HFM-IVOS  
MALE GROUP: 1000 MG/KG/DAY

| ANIMAL | MOTILE SPERM |
|--------|--------------|
| 43277  | 85           |
| 43278  | 88           |
| 43280  | 77           |
| 43281  | 67           |
| 43282  | 69           |
| MEAN   | 77.2         |
| S.D.   | 9.34         |
| N      | 5            |

PAGE 4  
WEEK 17

MANUALv1.0

09/19/2000

R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CWA-BFRIP

TABLE 136 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

| ANIMAL | NORMAL | 0 MG/KG/DAY               |           |                                        |           |                                             |                                               |
|--------|--------|---------------------------|-----------|----------------------------------------|-----------|---------------------------------------------|-----------------------------------------------|
|        |        | NORMAL HEAD/<br>SEPARATED |           | HEAD<br>ABSENT/<br>NORMAL<br>FLAGELLUM |           | MISSHAPEN<br>HEAD/<br>ABNORMAL<br>FLAGELLUM |                                               |
|        |        | FLAGELLUM                 | FLAGELLUM | FLAGELLUM                              | FLAGELLUM | FLAGELLUM                                   | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43289  | 97.0   | 2.0                       | 1.0       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| 43295  | 98.5   | 1.5                       | 0.0       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| 43308  | 100.0  | 0.0                       | 0.0       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| 43316  | 99.5   | 0.5                       | 0.0       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| 43326  | 98.5   | 0.5                       | 1.0       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| MEAN   | 98.7   | 0.9                       | 0.4       | 0.0                                    | 0.0       | 0.0                                         | 0.0                                           |
| S.D.   | 1.15   | 0.82                      | 0.55      | 0.00                                   | 0.00      | 0.00                                        | 0.00                                          |
| N      | 5      | 5                         | 5         | 5                                      | 5         | 5                                           | 5                                             |

PROJECT NO. :WIL-186012  
SPONSOR :CWA-BFRIP

TABLE 136 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

|        |        | 100 MG/KG/DAY             |                                |                                 |                               |                                       |                                   |
|--------|--------|---------------------------|--------------------------------|---------------------------------|-------------------------------|---------------------------------------|-----------------------------------|
| ANIMAL | NORMAL | HEAD                      |                                | MISSHAPEN                       |                               | DEGENERATIVE                          |                                   |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT /<br>NORMAL<br>FLAGELLUM | HEAD /<br>NORMAL<br>FLAGELLUM | FLAGELLAR<br>DEFECTS /<br>NORMAL HEAD | OTHER<br>DEFECTS /<br>NORMAL HEAD |
| 43285  | 98.5   | 1.0                       | 0.5                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| 43293  | 100.0  | 0.0                       | 0.0                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| 43311  | 98.5   | 0.5                       | 1.0                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| 43320  | 100.0  | 0.0                       | 0.0                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| 43340  | 98.0   | 0.5                       | 1.5                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| MEAN   | 99.0   | 0.4                       | 0.6                            | 0.0                             | 0.0                           | 0.0                                   | 0.0                               |
| S.D.   | 0.94   | 0.42                      | 0.65                           | 0.00                            | 0.00                          | 0.00                                  | 0.00                              |
| N      | 5      | 5                         | 5                              | 5                               | 5                             | 5                                     | 5                                 |

PROJECT NO.: WIL-196012  
SPONSOR: CMA-BFRIP

TABLE 136 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

|        |        | 300 MG/KG/DAY             |                                |                                |                              |                                |                                      |
|--------|--------|---------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------------------|
| ANIMAL | NORMAL | HEAD                      |                                | MISSHAPEN                      |                              | DEGENERATIVE                   |                                      |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | HEAD/<br>NORMAL<br>FLAGELLUM | HEAD/<br>ABNORMAL<br>FLAGELLUM | FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43290  | 100.0  | 0.0                       | 0.0                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| 43307  | 100.0  | 0.0                       | 0.0                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| 43309  | 98.5   | 1.5                       | 0.0                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| 43318  | 99.5   | 0.0                       | 0.5                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| 43322  | 100.0  | 0.0                       | 0.0                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| MEAN   | 99.6   | 0.3                       | 0.1                            | 0.0                            | 0.0                          | 0.0                            | 0.0                                  |
| S.D.   | 0.65   | 0.67                      | 0.22                           | 0.00                           | 0.00                         | 0.00                           | 0.00                                 |
| N      | 5      | 5                         | 5                              | 5                              | 5                            | 5                              | 5                                    |

PROJECT NO.: WIL-186012  
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TABLE 136 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY DIFFERENTIAL COUNT (PERCENTAGE)

|        |        | 1000 MG/KG/DAY            |                                |                                  |                              |                                |                                      |
|--------|--------|---------------------------|--------------------------------|----------------------------------|------------------------------|--------------------------------|--------------------------------------|
| ANIMAL | NORMAL | HEAD                      |                                | MISSHAPE                         |                              | DEGENERATIVE                   |                                      |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>ABNORMAL<br>FLAGELLUM | HEAD/<br>NORMAL<br>FLAGELLUM | HEAD/<br>ABNORMAL<br>FLAGELLUM | FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43277  | 99.0   | 0.0                       | 1.0                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| 43278  | 100.0  | 0.0                       | 0.0                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| 43280  | 99.0   | 0.5                       | 0.5                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| 43281  | 100.0  | 0.0                       | 0.0                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| 43282  | 99.5   | 0.0                       | 0.5                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| MEAN   | 99.5   | 0.1                       | 0.4                            | 0.0                              | 0.0                          | 0.0                            | 0.0                                  |
| S.D.   | 0.50   | 0.22                      | 0.42                           | 0.00                             | 0.00                         | 0.00                           | 0.00                                 |
| N      | 5      | 5                         | 5                              | 5                                | 5                            | 5                              | 5                                    |

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

TABLE 137 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

| ANIMAL | NORMAL | 0 MG/KG/DAY                            |                                        |                                             |                                           |                                                      |                                               |
|--------|--------|----------------------------------------|----------------------------------------|---------------------------------------------|-------------------------------------------|------------------------------------------------------|-----------------------------------------------|
|        |        | NORMAL HEAD/<br>SEPARATED<br>FLAGELLUM | HEAD<br>ABSENT/<br>NORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>ABNORMAL<br>FLAGELLUM | MISSHAPEN<br>HEAD/<br>NORMAL<br>FLAGELLUM | DEGENERATIVE<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD | OTHER<br>FLAGELLAR<br>DEFECTS/<br>NORMAL HEAD |
| 43289  | 194    | 4                                      | 2                                      | 0                                           | 0                                         | 0                                                    | 0                                             |
| 43295  | 197    | 3                                      | 0                                      | 0                                           | 0                                         | 0                                                    | 0                                             |
| 43308  | 200    | 0                                      | 0                                      | 0                                           | 0                                         | 0                                                    | 0                                             |
| 43316  | 199    | 1                                      | 0                                      | 0                                           | 0                                         | 0                                                    | 0                                             |
| 43326  | 197    | 1                                      | 2                                      | 0                                           | 0                                         | 0                                                    | 0                                             |
| MEAN   | 197.4  | 1.8                                    | 0.8                                    | 0.0                                         | 0.0                                       | 0.0                                                  | 0.0                                           |
| S.D.   | 2.30   | 1.64                                   | 1.10                                   | 0.00                                        | 0.00                                      | 0.00                                                 | 0.00                                          |
| N      | 5      | 5                                      | 5                                      | 5                                           | 5                                         | 5                                                    | 5                                             |

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

TABLE 137 (WEEK 17 RECOVERY NEUROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

|        |        | 100 MG/KG/DAY             |                   |                        |                            |                 |                        |
|--------|--------|---------------------------|-------------------|------------------------|----------------------------|-----------------|------------------------|
| ANIMAL | NORMAL | HEAD                      |                   |                        | MISSHAPE                   |                 |                        |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL | ABNORMAL/<br>FLAGELLUM | HEAD/<br>ABSENT/<br>NORMAL | HEAD/<br>NORMAL | ABNORMAL/<br>FLAGELLUM |
| 43285  | 1.97   | 2                         | 1                 | 0                      | 0                          | 0               | 0                      |
| 43293  | 2.00   | 0                         | 0                 | 0                      | 0                          | 0               | 0                      |
| 43311  | 1.97   | 1                         | 2                 | 0                      | 0                          | 0               | 0                      |
| 43320  | 2.00   | 0                         | 0                 | 0                      | 0                          | 0               | 0                      |
| 43340  | 1.96   | 1                         | 3                 | 0                      | 0                          | 0               | 0                      |
| MEAN   | 1.98   | 0.8                       | 1.2               | 0.0                    | 0.0                        | 0.0             | 0.0                    |
| S.D.   | 1.87   | 0.84                      | 1.30              | 0.00                   | 0.00                       | 0.00            | 0.00                   |
| N      | 5      | 5                         | 5                 | 5                      | 5                          | 5               | 5                      |

PAGE 2  
WEEK 17

PROJECT NO.: WIL-186012  
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TABLE 137 (WEEK 17 RECOVERY NECROPSY)  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

|        |        | 300 MG/KG/DAY             |                   |                        |                 |                        |                        |
|--------|--------|---------------------------|-------------------|------------------------|-----------------|------------------------|------------------------|
| ANIMAL | NORMAL | HEAD                      |                   |                        | MISSHAPEN       |                        |                        |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL | ABNORMAL/<br>FLAGELLUM | HEAD/<br>NORMAL | ABNORMAL/<br>FLAGELLUM | ABNORMAL/<br>FLAGELLUM |
| 43290  | 200    | 0                         | 0                 | 0                      | 0               | 0                      | 0                      |
| 43307  | 200    | 0                         | 0                 | 0                      | 0               | 0                      | 0                      |
| 43309  | 197    | 3                         | 0                 | 0                      | 0               | 0                      | 0                      |
| 43318  | 199    | 0                         | 1                 | 0                      | 0               | 0                      | 0                      |
| 43322  | 200    | 0                         | 0                 | 0                      | 0               | 0                      | 0                      |
| MEAN   | 199.2  | 0.6                       | 0.2               | 0.0                    | 0.0             | 0.0                    | 0.0                    |
| S.D.   | 1.30   | 1.34                      | 0.45              | 0.00                   | 0.00            | 0.00                   | 0.00                   |
| N      | 5      | 5                         | 5                 | 5                      | 5               | 5                      | 5                      |

TABLE 137 (WEEK 17 RECOVERY NECROPSY)  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL SPERM MORPHOLOGY COUNTS (ABSOLUTE NUMBER)

|        |        | 1000 MG/KG/DAY            |                                |                                |                       |                       |           |
|--------|--------|---------------------------|--------------------------------|--------------------------------|-----------------------|-----------------------|-----------|
| ANIMAL | NORMAL | HEAD                      |                                | MISSHAPEN                      |                       | DEGENERATIVE          |           |
|        |        | NORMAL HEAD/<br>SEPARATED | ABSENT/<br>NORMAL<br>FLAGELLUM | ABSENT/<br>NORMAL<br>FLAGELLUM | ABNORMAL<br>FLAGELLUM | ABNORMAL<br>FLAGELLUM | FLAGELLUM |
| 43277  | 198    | 0                         | 2                              | 0                              | 0                     | 0                     | 0         |
| 43278  | 200    | 0                         | 0                              | 0                              | 0                     | 0                     | 0         |
| 43280  | 198    | 1                         | 1                              | 0                              | 0                     | 0                     | 0         |
| 43281  | 200    | 0                         | 0                              | 0                              | 0                     | 0                     | 0         |
| 43282  | 199    | 0                         | 1                              | 0                              | 0                     | 0                     | 0         |
| MEAN   | 199.0  | 0.2                       | 0.8                            | 0.0                            | 0.0                   | 0.0                   | 0.0       |
| S.D.   | 1.00   | 0.45                      | 0.84                           | 0.00                           | 0.00                  | 0.00                  | 0.00      |
| N      | 5      | 5                         | 5                              | 5                              | 5                     | 5                     | 5         |

PAGE 4  
 WEEK 17

MANUALv1.0

09/19/2000

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WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX A**

Final Report on the Storage Stability of  
Hexabromocyclododecane (HBCD) in Bulk  
Storage in Support of "A 90-Day Oral (Gavage)  
Toxicity Study of HBCD in Rats (Albemarle Corporation)

**Amendment to the Final Report On The Storage Stability Of Hexabromocyclododecane  
(HBCD) In Bulk Storage In Support Of A "90-Day Oral (Gavage) Toxicity Study Of  
HBCD In Rats"**

WIL Research Laboratories Reference Study No. WIL-186012

The Final Report is amended to reflect the following changes:

The Study Director was changed on April 20, 2000, to Christopher P. Chengelis, Ph. D., D.A.B.T., from Jeannie Kirkpatrick.

The zip code (22209) for the Study Monitor has been added.

Pagination has been added to the Final Report.



Paul F. Ranken, Ph. D.  
Study Chemist

December 7, 2000  
Date

**FINAL REPORT ON THE STORAGE STABILITY OF  
HEXBROMOCYCLOCODECANE (HBCD) IN BULK STORAGE IN  
SUPPORT OF A "90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD  
IN RATS"**

**WIL Research Laboratories Reference Study No. WIL-186012**

**Prepared for:** Wendy K. Sherman, Study Monitor  
American Chemistry Council  
Brominated Flame Retardant Industry Panel  
1300 Wilson Boulevard  
Arlington, Virginia

Jeannie Kirkpatrick, Study Director  
WIL Research Laboratories, Inc.  
1407 George Road  
Ashland, OH 44805-9281

**Prepared by:** Dr. Paul F. Ranken, Study Chemist  
Research and Development Department  
Albemarle Corporation  
Albemarle Technical Center  
8000 GSRI Avenue  
Baton Rouge, LA 70820

**ALBEMARLE CORPORATION  
RESEARCH AND DEVELOPMENT DEPARTMENT**

**FINAL REPORT ON THE STORAGE STABILITY OF HEXABROMOCYCLODODECANE  
(HBCD) IN BULK STORAGE IN SUPPORT OF A "90-DAY ORAL (Gavage) TOXICITY  
STUDY OF HBCD IN RATS"**

WIL Research Laboratories Reference Study No. WIL-186012

- |      |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I.   | Reference Protocol Number:     | HBCD-02-14-2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| II.  | Sponsor:                       | American Chemistry Council<br>Brominated Flame Retardant Industry Panel<br>1300 Wilson Boulevard<br>Arlington, Virginia 22209<br>Study Monitor: Wendy K. Sherman                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| III. | Analytical Testing Facilities: | Albemarle Corporation<br>Albemarle Technical Center<br>8000 GSRI Avenue<br>Baton Rouge, LA 70820<br>Study Chemist: Paul F. Ranken, Ph. D.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| IV.  | Dates of Performance:          | Study initiation date: February 14, 2000.<br>Interim report issued: March 15, 2000.<br>Study completion date: October 19, 2000.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| V.   | Test Article:                  | Hexabromocyclododecane (WIL Test Substance No. 4615). A pre-study sample of the Test Article was prepared at Wildlife International Ltd., 8651 Brooks Drive, Easton, MD 21601 and forwarded to the Albemarle Technical Center for analysis. A study day-zero sample and an end-of-study sample of the Test Article were sent by WIL Research Laboratories, Inc., to the Albemarle Technical Center. The pre-study, study day-zero and the end-of-study samples of the Test Article are a portion of the bulk material sent by Wildlife International Ltd. to WIL Research Laboratories, Inc., 1407 George Road, Ashland, OH 44805-9281. |
| VI.  | Objective/Methodology:         | This study was initiated to confirm the identity of the test article and to confirm the stability of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

the test article during the "90-Day Oral (Gavage) Toxicity Study of HBCD in Rats", conducted by WIL Research Laboratories. The identity of a pre-study sample of the test article was confirmed by Fourier Transform Infrared Spectroscopy using SOP No. ARS-284-R4. In this procedure, the sample infrared spectrum was compared to a standard reference infrared spectrum of HBCD. The reference infrared spectrum was located in the Aldrich Condensed Phase High Resolution data library as 1-107A. The data library is an electronic collection of infrared spectra given in the Aldrich Library of FT-IR Spectra monographs. The purity (isomer distribution) of the pre-study sample, the study day-zero sample and the end-of-study sample was determined by High Performance Liquid Chromatography (HPLC) using SOP No. ARS-432-R1. In this procedure, an aliquot of a solution containing the test article was injected into the HPLC system and the distribution of the three, individual HBCD isomers was expressed as a percentage (area%) of the total integrated HBCD peak area. Chain of Custody and sample handling were conducted as per established standard operating procedures.

VII. Results:

The attached **Conclusions and Test Article Analytical Data** contains all of the tests results from the study. The identity of the pre-study test article was confirmed by Fourier Transform Infrared spectroscopy. The stability of the test article was confirmed by HPLC; the concentrations (area%) of the individual HBCD isomers in the day-zero sample and the end-of-study sample were within 15% of the concentrations of the individual isomers in the pre-study sample. There were no circumstances that may have affected the quality or integrity of the data.

VIII. Regulatory Requirements:

The study conformed to the requirements of EPA TSCA GLP's listed under 40 CFR Part

792 and the OECD [C(97) 186/Final] Good Laboratory Practice Regulations.

IX. Data/Record Retention:

All original logbooks, spectra, original data and reports will be kept filed in the custody of the Study Chemist until the storage stability study is completed, after which time they will be forwarded to the GLP Coordinator and stored in the designated Health and Environment archives at Albemarle Corporation, Health and Environment Department, 451 Florida Street, Baton Rouge, LA 70801.

*Paul F. Ranken*

Paul F. Ranken, Ph. D.  
STUDY CHEMIST

*October 19, 2000*

DATE

**HPLC ANALYSES**

**Isomer Distribution, Pre-Study Sample of Test Article**

|                  | Analysis 1    | Analysis 2 | Average |
|------------------|---------------|------------|---------|
| Alpha Isomer     | 8.4           | 9.5        | 8.9     |
| Beta Isomer      | 6.4           | 6.7        | 6.6     |
| Gamma Isomer     | 85.2          | 83.8       | 84.5    |
| Analyst          | Judy Arroyave |            |         |
| Date of Analysis | March 3, 2000 |            |         |

**Isomer Distribution, Day-Zero Sample of Test Article**

|                  | Analysis 1    | Analysis 2 | Average |
|------------------|---------------|------------|---------|
| Alpha Isomer     | 7.9           | 9.7        | 8.8     |
| Beta Isomer      | 5.2           | 7          | 6.1     |
| Gamma Isomer     | 86.8          | 83.4       | 85.1    |
| Analyst          | Judy Arroyave |            |         |
| Date of Analysis | June 2, 2000  |            |         |

**Isomer Distribution, End-of-Study Sample of Test Article**

|                  | Analysis 1         | Analysis 2 | Average |
|------------------|--------------------|------------|---------|
| Alpha Isomer     | 8.6                | 7.9        | 8.3     |
| Beta Isomer      | 6.2                | 5.4        | 5.8     |
| Gamma Isomer     | 85.2               | 86.7       | 86      |
| Analyst          | Judy Arroyave      |            |         |
| Date of Analysis | September 11, 2000 |            |         |

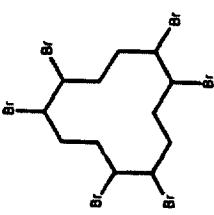
**CONCLUSIONS AND TEST ARTICLE ANALYTICAL DATA**

**CHEMICAL NAME:** Hexabromocyclododecane  
**C.A.S. No.:** 3194-55-6

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>16</sub>Br<sub>6</sub>

**PHYSICAL FORM:** White Powder

**CHEMICAL STRUCTURE:**



| ANALYSIS                                                                                                                                                                                               | RESULTS                                                                                                                   |                  | ANALYSIS DATES                     | ANALYST                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------|------------------------------------|
| FT-IR                                                                                                                                                                                                  | The sample FT-IR spectrum matched that of the Aldrich reference spectrum. All spectra are on file with the original data. |                  | 03/03/00                           | W. T. Cobb                         |
| HPLC                                                                                                                                                                                                   | Pre-Study Average                                                                                                         | Day-Zero Average | Difference (%)                     |                                    |
| Alpha isomer                                                                                                                                                                                           | 8.9                                                                                                                       | 8.8              | 1.1                                | 03/03/00 & 06/02/00 J. S. Arroyave |
| Beta isomer                                                                                                                                                                                            | 6.6                                                                                                                       | 6.1              | 7.6                                |                                    |
| Gamma isomer                                                                                                                                                                                           | 84.5                                                                                                                      | 85.1             | 0.7                                |                                    |
| Pre-Study Average                                                                                                                                                                                      | End-of-Study Average                                                                                                      | Difference (%)   | 03/03/00 & 09/11/00 J. S. Arroyave |                                    |
| Alpha isomer                                                                                                                                                                                           | 8.9                                                                                                                       | 8.3              | 6.7                                |                                    |
| Beta isomer                                                                                                                                                                                            | 6.6                                                                                                                       | 5.8              | 12.1                               |                                    |
| Gamma isomer                                                                                                                                                                                           | 84.5                                                                                                                      | 86               | 1.8                                |                                    |
| <b>CONCLUSION:</b> Based on these analytical data, the test article was identified as HBCD. The test article was stable during the course of the "90-Day Oral (Gavage) Toxicity Study of HBCD in Rats" |                                                                                                                           |                  |                                    |                                    |

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX B**

Analytical Chemistry Report (WIL Research Laboratories, Inc.)

WIL-186012  
CMA-BFRIP

**A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

**APPENDIX**

Assay Validation and Analysis of Dosing Formulations

## **A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

### Assay Validation and Analysis of Dosing Formulations

#### **I. INTRODUCTION**

This report provides the detailed description and validation of an assay for the determination of hexabromocyclododecane (HBCD) in corn oil suspensions utilizing high performance liquid chromatography (HPLC) with ultraviolet (UV) detection at 230 nm. HBCD homogeneity, stability and concentrations in corn oil suspensions were also assessed.

#### **II. SUMMARY**

Quantitation was performed utilizing calibration standards in the range of 0.300 to 5.00 mg/mL. Precision and accuracy were verified by the analysis of quality control samples (QCs) prepared as fortified corn oil with final concentrations of 20.0 and 200 mg/mL.

To assess stability, dose formulations were analyzed after 10 days of room temperature storage. The mean concentrations of the stored formulations were within 10% of the Time Zero concentrations. Therefore, the formulations were considered to be stable.

The dosing formulations were homogeneous with respect to HBCD. The overall mean concentrations for samples taken from the top, middle and bottom strata ranged from 90.3 to 93.3% of the target dose concentrations. The relative standard deviations (RSDs) were 0.74 and 2.0, indicating uniform dispersal of HBCD in corn oil. Subsequent formulations used for dose administration were analyzed and had concentrations within the acceptance criteria (%RE  $\leq$  15%).

### III. EXPERIMENTAL

#### A. High Performance Liquid Chromatography

|                   |                                                                                                                                                    |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Instrument:       | Hewlett Packard 1100 liquid chromatograph equipped with a variable wavelength detector, autosampler and ChemStation software, or equivalent system |
| Column:           | Zorbax RX-C18, 250 mm x 4.6 mm                                                                                                                     |
| Mobile Phase:     | 50% (80:20 ACN:H <sub>2</sub> O)<br>50% (ACN)                                                                                                      |
| Flow Rate:        | 1.0 mL/min                                                                                                                                         |
| Detector:         | UV at 230 nm                                                                                                                                       |
| Injection Volume: | 20 µL                                                                                                                                              |
| Retention Time:   | Approximately 5.8 min for HBCD                                                                                                                     |

#### B. Preparation of Mobile Phase

A premix of 80%:20% (v/v) acetonitrile (ACN) : HPLC grade water was prepared as follows: 800-mL of ACN was added to 200-mL of water and mixed. This premix solution was mixed 50:50 with ACN by the instrument to make up the mobile phase.

#### C. Preparation of Calibration Stock and Standard HBCD Solutions

A primary stock solution was prepared by accurately weighing approximately 0.50 g of HBCD (TMS-3934A-2 or TMS-4590A-7) into a tared glass weighing funnel. The material was quantitatively transferred into a 10-mL volumetric flask and diluted to volume with tetrahydrofuran (THF) to a final concentration of about 50-mg HBCD/mL THF. Aliquots of the primary stock solution were diluted with THF to yield secondary stock solutions containing approximately 3.00, 5.00, 15.0, 30.0, and 50.0-mg HBCD/mL. Aliquots of these

secondary stock solutions were added to a screw cap test tube containing 0.2 mL corn oil and were diluted with ACN to yield calibration standard solutions at HBCD concentrations of 0.30, 0.50, 1.50, 3.00, and 5.00 mg/mL. The test tubes were vortexed for 5 minutes, centrifuged for 10 minutes, and a portion of the top layer was filtered through a 0.2- $\mu$ m filter. All stock and standard solutions were prepared fresh as needed.

#### **D. Preparation of Samples**

A portion of the corn oil sample (0.2-mL) and 1.0-mL of THF was added to a screw cap test tube. The test tube was brought to a final volume of 10-mL with ACN. The tube was then vortexed for 5 minutes and centrifuged for 10 minutes. A small portion of the top layer was filtered though a 0.2- $\mu$ m filter into an autosampler vial. Aliquots (20  $\mu$ L) of these filtrates were injected for HPLC/UV analysis.

#### **E. Preparation of Quality Control Samples (QCs)**

A primary QC stock solution was prepared by accurately weighing approximately 0.20 g of HBCD (TMS-3934A-2 or TMS-4590A-7) into a tared glass weighing funnel. The material was quantitatively transferred into a 5-mL volumetric flask and diluted to volume with tetrahydrofuran (THF) to a final concentration of about 40-mg HBCD/mL THF. An aliquot of the primary QC stock solution was diluted (1:10) with THF to yield a secondary QC stock solution containing 4.0-mg HBCD/mL. Aliquots (1.0 mL) of these stock solutions were added to screw cap test tubes containing 0.2-mL corn oil and were diluted with ACN to a final volume of 10.0 mL yielding processed QC solutions at concentrations of 0.40 and 4.0 mg/mL. The test tubes were vortexed for 5 minutes, centrifuged for 10 minutes, and a portion of the top layer was filtered through a 0.2- $\mu$ m filter. All stock and standard solutions were prepared fresh as needed.

#### F. Calibration and Quantitation

Single injections were made of each standard and sample. A calibration curve was constructed for each set of analyses. The HBCD peak areas (y) and the theoretical concentrations of the calibration standards (x) were fit with a least-squares regression analysis to the ln quadratic function:

$$\ln(y) = a * [\ln(x)]^2 + b * \ln(x) + c.$$

Concentrations were back-calculated from the results of the regression analysis using a PC spreadsheet program (Microsoft® Excel). The concentration data were transferred to another Excel spreadsheet, where appropriate summary statistics [mean, standard deviation (SD), relative standard deviation (RSD), and percent relative error (%RE)] were calculated and presented in tabular form. The concentrations of the dosing formulations and QCs were calculated by applying any necessary multiplication factors.

The concentration data calculated for calibration standards, QCs, and dosing formulations were transferred to Excel summary tables where the percent relative error (%RE) or percent of target and associated statistics were calculated and presented. If the calculations are repeated with the displayed data, slightly different values may be obtained because the displayed data are rounded.

### IV. RESULTS AND DISCUSSION

Under the described chromatographic conditions, the retention time of HBCD was approximately 5.8 minutes. The total analysis time required for each run was approximately 8 minutes. The validity of the assay procedure was established through a careful study of the calibration reproducibility, accuracy and precision, ruggedness, and stability of HBCD in processed samples and dosing formulations.

#### A. Calibration Reproducibility

During each of three validation sessions, triplicate calibration samples at five concentration levels were prepared and analyzed as described above. Single

injections were made of each processed calibration sample. The resulting peak area-concentration data were fit to the ln-quadratic function using the least-squares regression analysis. The results of the regression analyses were used to back-calculate from the peak area data the corresponding concentrations. The reproducibility of the calibration curve data was considered valid when 1) the inter-session variability (RSD) of the back-calculated concentrations at each concentration level was  $\leq 15\%$ ; and 2) the mean back-calculated concentrations at each concentration level were within 15% of the theoretical values ( $\%RE \leq 15\%$ ).

The back-calculated concentration values and the associated intra- and inter-session statistics for the HBCD assay calibration samples are summarized in Table I. The inter-session variability (RSD) of the back-calculated concentrations at each level ranged from 0.1% to 2.8%. The inter-session concentration means had %RE values ranging from -4.5% to 1.2%.

Based on these criteria and the resulting validation data, the reproducibility of the calibration data was acceptable.

#### B. Precision and Accuracy

During each of three validation sessions, triplicate QC samples at two concentration levels were prepared and analyzed as described above. Single injections were made of each processed QC sample. The results of the regression analyses were used to back-calculate from these QC peak area data the corresponding concentrations. The variability (RSD) of these back-calculated QC concentration data was used as a measure of assay precision. The precision of the method was considered acceptable when the inter-session RSD of the back-calculated concentrations at each QC concentration level is  $\leq 15\%$ . The difference from theoretical of the back-calculated QC concentration means (%RE) was used as a measure of assay accuracy. The accuracy of the method was considered acceptable when the inter-session concentration means

of the back-calculated concentrations at each QC concentration level had %RE values  $\leq 15\%$ .

The back-calculated concentration values and the associated intra- and inter-session statistics for the HBCD assay QC samples are summarized in Table II. The inter-session variability (RSD) of the back-calculated concentrations at each level (precision) ranged from 2.3% to 5.9%. The inter-session concentration means had %RE values (accuracy) ranging from -3.2% to 4.5%.

Based on the criteria mentioned above, the precision and accuracy of the HBCD assay were acceptable. The integrated peak area data from both the calibration and QC sample analyses are summarized in Tables III and IV, respectively.

### C. Assay Ruggedness

There are several assay concerns in which an analyst may consider as included in the category of assay ruggedness. In this assay validation, ruggedness is referred to as the ability of another analyst to successfully perform the procedure as described. Assay ruggedness is demonstrated when two or more different analysts successfully conduct at least one session of the required three validation sessions. Assay ruggedness was successfully demonstrated for this procedure.

### D. Stability of HBCD in Processed Samples

To help demonstrate stability in processed samples, the Microsoft Excel Student's t-test was used. These results are presented in Table III where the mean area at each concentration level of the front set of standards was compared to those of the back set of standards. The acceptance criteria for the mean areas to be significantly different, at 5 degrees of freedom with 95% confidence, is that the calculated t-value must be greater than the table t-value. The greatest

calculated t-value is 0.99373 and the table t-value is 2.571. The t-test showed that standards, when analyzed at the beginning of the analysis, produced the same results as when analyzed at the end of the analysis, several hours later. Therefore no significant difference signifies stability of processed samples.

#### E. Homogeneity and Stability of Dosing Formulations

A representative set of formulations was prepared on 4-14-00 for the evaluation of homogeneity, resuspension homogeneity and stability. Samples from the top, middle and bottom of the formulation batches were collected on 4-14-00 to assess homogeneity. Samples from top and bottom were also collected on 4-14-00, 4-19-00, and 4-24-00 to assess 1, 5, and 10 day resuspension homogeneity of the test material in corn oil. The results of the homogeneity and resuspension homogeneity analyses are presented in Tables V through X with the mean concentrations summarized as follows:

| <u>Homogeneity</u>        | <u>Low</u><br><u>(20 mg/mL)</u> | <u>High</u><br><u>(200 mg/mL)</u> |
|---------------------------|---------------------------------|-----------------------------------|
| Top                       | 18.8                            | 180                               |
| Middle                    | 18.9                            | 182                               |
| Bottom                    | 18.2                            | 180                               |
| Group Mean(mg/mL)         | 18.7                            | 181                               |
| SD                        | 3.6E-01                         | 1.3E+00                           |
| RSD(%)                    | 2.0                             | 0.74                              |
| Mean % of Target          | 93.3                            | 90.3                              |
| <u>Day 1 Resuspension</u> | <u>Low</u><br><u>(20 mg/mL)</u> | <u>High</u><br><u>(200 mg/mL)</u> |
| Top                       | 18.9                            | 191                               |
| Bottom                    | 18.7                            | 192                               |
| Group Mean(mg/mL)         | 18.8                            | 191                               |
| SD                        | 1.4E-01                         | 8.8E-01                           |
| RSD(%)                    | 0.74                            | 0.46                              |
| Mean % of Target          | 94.1                            | 95.6                              |

| <u>Day 5 Resuspension</u> | Low<br><u>(20 mg/mL)</u> | High<br><u>(200 mg/mL)</u> |
|---------------------------|--------------------------|----------------------------|
| Top                       | 21.4                     | 205                        |
| Bottom                    | 21.0                     | 207                        |
| Group Mean(mg/mL)         | 21.2                     | 206                        |
| SD                        | 2.7E-01                  | 9.1E-01                    |
| RSD(%)                    | 1.3                      | 0.44                       |
| Mean % of Target          | 106                      | 103                        |

| <u>Day 10 Resuspension</u> | Low<br><u>(20 mg/mL)</u> | High<br><u>(200 mg/mL)</u> |
|----------------------------|--------------------------|----------------------------|
| Top                        | 19.7                     | 197                        |
| Bottom                     | 19.6                     | 196                        |
| Group Mean(mg/mL)          | 19.7                     | 196                        |
| SD                         | 1.2E-01                  | 3.1E-01                    |
| RSD(%)                     | 0.62                     | 0.16                       |
| Mean % of Target           | 98.3                     | 98.1                       |

Each group met the WIL SOP No. AC-086 (as revised) requirement for homogeneity, i.e., the RSD for the overall mean concentration was 10% or less at a concentration that is within the acceptable limits (%RE ≤ 15%).

A duplicate set of formulations was stored at room temperature for 10 days and then processed and analyzed to assess stability. After 10 days, the mean concentrations ranged from 100 to 101% of the time zero concentrations, and, therefore, the formulations were considered stable for 10 days (Table IX).

#### F. Concentration Analysis of Dosing Formulations

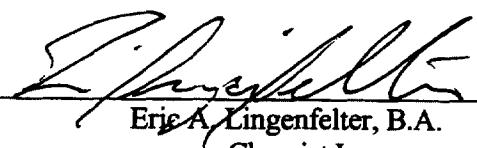
The results of the periodic concentration analyses of the dosing formulations are presented in Tables X through XV.

The analyzed formulations used for dose administration ranged from 91.8% - 106% of target and, therefore, met the WIL SOP No. AC-086 requirement for concentration acceptability, i.e., the analyzed concentrations were within 15% of the target dose concentrations.

## V. CONCLUSION

A precise and accurate method for the quantitation of HBCD in dosing formulations was validated. The test article was blended in corn oil to produce homogeneous suspension formulations. There was insignificant loss of HBCD after 10 days of room temperature storage. The analyzed dosing formulations had concentrations within the required 15% of the target dose concentrations.

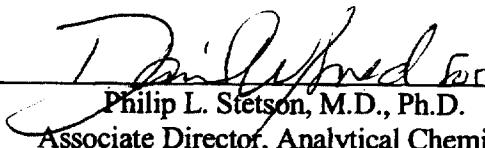
Prepared by:

  
Eric A. Lingenfelter, B.A.  
Chemist I

12-14-01

Date

Reviewed by:

  
Philip L. Stetson, M.D., Ph.D.  
Associate Director, Analytical Chemistry

12/14/01

Date

**Assay Validation and Analysis of Dosing Formulations**

**Tables I-XV**

**A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

**Table I: Back-Calculated Concentrations from Calibration Standards Data**

| STD Conc (mg/mL)           | 0.300  | 0.500  | 1.50   | 3.00   | 5.00   |
|----------------------------|--------|--------|--------|--------|--------|
| <b>Set 1 (4/12/00)</b>     |        |        |        |        |        |
| Samp 1                     | 0.270  | 0.475  | 1.42   | 2.90   | 4.73   |
| Samp 2                     | 0.284  | 0.506  | 1.55   | 3.12   | 5.11   |
| Samp 3                     | 0.282  | 0.504  | 1.56   | 3.10   | 5.08   |
| Mean                       | 0.279  | 0.495  | 1.51   | 3.04   | 4.97   |
| SD                         | 0.0076 | 0.017  | 0.079  | 0.12   | 0.21   |
| RSD                        | 2.7    | 3.5    | 5.2    | 4.0    | 4.3    |
| %RE                        | -7.1   | -0.95  | 0.72   | 1.4    | -0.51  |
| <b>Set 2 (4/13/00)</b>     |        |        |        |        |        |
| Samp 1                     | 0.293  | 0.500  | 1.48   | 3.04   | 4.98   |
| Samp 2                     | 0.295  | 0.503  | 1.48   | 3.04   | 4.98   |
| Samp 3                     | 0.296  | 0.498  | 1.48   | 3.06   | 4.98   |
| Mean                       | 0.295  | 0.500  | 1.48   | 3.05   | 4.98   |
| SD                         | 0.0018 | 0.0024 | 0.0025 | 0.0094 | 0.0036 |
| RSD                        | 0.61   | 0.48   | 0.17   | 0.31   | 0.073  |
| %RE                        | -1.8   | 0.032  | -1.3   | 1.5    | -0.40  |
| <b>Set 3 (4/13/00)</b>     |        |        |        |        |        |
| Samp 1                     | 0.279  | 0.505  | 1.52   | 3.00   | 5.00   |
| Samp 2                     | 0.289  | 0.495  | 1.52   | 3.01   | 5.02   |
| Samp 3                     | 0.283  | 0.490  | 1.51   | 3.06   | 4.93   |
| Mean                       | 0.284  | 0.497  | 1.51   | 3.02   | 4.98   |
| SD                         | 0.0053 | 0.0077 | 0.0056 | 0.031  | 0.046  |
| RSD                        | 1.9    | 1.6    | 0.37   | 1.0    | 0.92   |
| %RE                        | -5.4   | -0.67  | 0.87   | 0.76   | -0.31  |
| <b>Interset Statistics</b> |        |        |        |        |        |
| Mean                       | 0.286  | 0.497  | 1.50   | 3.04   | 4.98   |
| SD                         | 0.0081 | 0.0025 | 0.018  | 0.012  | 0.0051 |
| RSD                        | 2.8    | 0.51   | 1.2    | 0.40   | 0.10   |
| %RE                        | -4.8   | -0.53  | 0.11   | 1.2    | -0.41  |

**A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

**Table II: Back-Calculated Concentrations from QC Sample Data**

| QC Conc (mg/mL)            | 20.0   | 200  |
|----------------------------|--------|------|
| <b>Set 1 (4/12/00)</b>     |        |      |
| Samp 1                     | 18.8   | 189  |
| Samp 2                     | 20.3   | 199  |
| Samp 3                     | 20.9   | 198  |
| Mean                       | 20.0   | 196  |
| SD                         | 1.1    | 5.4  |
| RSD                        | 5.4    | 2.8  |
| %RE                        | 0.0088 | -2.2 |
| <b>Set 2 (4/13/00)</b>     |        |      |
| Samp 1                     | 22.9   | 197  |
| Samp 2                     | 23.0   | 197  |
| Samp 3                     | 20.9   | 196  |
| Mean                       | 22.3   | 197  |
| SD                         | 1.2    | 0.78 |
| RSD                        | 5.4    | 0.39 |
| %RE                        | 11     | -1.7 |
| <b>Set 3 (4/13/00)</b>     |        |      |
| Samp 1                     | 19.9   | 179  |
| Samp 2                     | 19.9   | 192  |
| Samp 3                     | 20.0   | 194  |
| Mean                       | 19.9   | 188  |
| SD                         | 0.082  | 8.2  |
| RSD                        | 0.41   | 4.3  |
| %RE                        | -0.42  | -5.8 |
| <b>Interset Statistics</b> |        |      |
| Mean                       | 20.7   | 194  |
| SD                         | 1.3    | 4.5  |
| RSD                        | 6.5    | 2.3  |
| %RE                        | 3.7    | -3.2 |

**A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS**

**Table III: Area Response from Calibration Sample Data**

| <b>Set 1 (4/12/00) Front STD's</b> |           |           |            |            |            |
|------------------------------------|-----------|-----------|------------|------------|------------|
| Samp 1                             | 205.96040 | 364.06851 | 1095.84497 | 2257.64990 | 3661.57764 |
| Samp 2                             | 218.43115 | 390.70636 | 1189.36267 | 2435.12085 | 3961.28955 |
| Samp 3                             | 217.26059 | 390.08475 | 1206.24084 | 2424.60718 | 3927.81494 |
| <b>Set 1 (4/12/00) Back STD's</b>  |           |           |            |            |            |
| Samp 1                             | 211.29691 | 370.79718 | 1101.73706 | 2234.23120 | 3654.60620 |
| Samp 2                             | 220.50011 | 392.13290 | 1206.01782 | 2399.62061 | 3951.50830 |
| Samp 3                             | 218.67378 | 389.41345 | 1214.11499 | 2370.75928 | 3941.16064 |
| Student's t-Test<br>(t=)           | 0.57872   | 0.83239   | 0.84883    | 0.65037    | 0.99373    |
| <b>Set 2 (4/13/00) Front STD's</b> |           |           |            |            |            |
| Samp 1                             | 219.07106 | 376.14734 | 1126.46448 | 2312.49072 | 3799.25171 |
| Samp 2                             | 220.36392 | 379.91119 | 1127.12988 | 2323.94287 | 3817.51514 |
| Samp 3                             | 221.26804 | 378.43332 | 1128.06873 | 2333.72314 | 3808.71680 |
| <b>Set 2 (4/13/00) Back STD's</b>  |           |           |            |            |            |
| Samp 1                             | 236.93854 | 392.31970 | 1119.37085 | 2286.34692 | 3732.52661 |
| Samp 2                             | 239.67816 | 393.10791 | 1119.88440 | 2277.10962 | 3703.53979 |
| Samp 3                             | 239.94511 | 387.38232 | 1124.93030 | 2290.80347 | 3715.77026 |
| Student's t-Test<br>(t=)           | 0.00009   | 0.00369   | 0.03363    | 0.00625    | 0.00078    |
| <b>Set 3 (4/13/00) Front STD's</b> |           |           |            |            |            |
| Samp 1                             | 223.73825 | 375.32843 | 1125.85693 | 2278.01147 | 3805.69702 |
| Samp 2                             | 223.66386 | 381.05090 | 1129.92517 | 2289.79077 | 3803.96973 |
| Samp 3                             | 223.74609 | 378.08337 | 1146.79102 | 2312.35913 | 3737.63159 |
| <b>Set 3 (4/13/00) Back STD's</b>  |           |           |            |            |            |
| Samp 1                             | 258.17804 | 446.08752 | 1211.67773 | 2285.39282 | 3758.34937 |
| Samp 2                             | 274.12762 | 424.92288 | 1210.74829 | 2295.92847 | 3798.67993 |
| Samp 3                             | 264.25311 | 420.66928 | 1177.92273 | 2339.23291 | 3730.91284 |
| Student's t-Test<br>(t=)           | 0.00085   | 0.00285   | 0.00677    | 0.52407    | 0.54333    |

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A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS

**Table IV: Area Response from QC Sample Data**

| <b>Set 1 (4/12/00)</b> |           |            |
|------------------------|-----------|------------|
| Samp 1                 | 290.58609 | 2931.25098 |
| Samp 2                 | 313.97531 | 3082.79883 |
| Samp 3                 | 322.88379 | 3067.95801 |
| <b>Set 2 (4/13/00)</b> |           |            |
| Samp 1                 | 353.26202 | 2973.51099 |
| Samp 2                 | 354.57147 | 2984.70117 |
| Samp 3                 | 322.27600 | 2961.28027 |
| <b>Set 3 (4/13/00)</b> |           |            |
| Samp 1                 | 329.61633 | 2719.70459 |
| Samp 2                 | 330.04526 | 2914.80908 |
| Samp 3                 | 331.92099 | 2945.42285 |

A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
Table V: Homogeneity Analysis of the 4/14/2000 Preparations  
( Analyzed 4/17/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref#</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u><br>( % ) | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|--------------------|---------------------|---------------------------------------|
| Low Top      | 20                            | 101 - 1<br>101 - 2          | 609<br>610                   | 19.5<br>18.1                      | 97.3<br>90.4                      | 18.8                          | 9.8E-01            | 5.2                 | 93.9                                  |
| Low Mid      | 20                            | 101 - 3<br>101 - 4          | 611<br>612                   | 18.9<br>19.0                      | 94.4<br>94.9                      | 18.9                          | 7.3E-02            | 0.39                | 94.7                                  |
| Low Btm      | 20                            | 101 - 5<br>101 - 6          | 613<br>614                   | 18.2<br>18.3                      | 90.8<br>91.6                      | 18.2                          | 1.0E-01            | 0.55                | 91.2                                  |
| High Top     | 200                           | 101 - 7<br>101 - 8          | 615<br>616                   | 180<br>181                        | 89.8<br>90.4                      | 180                           | 8.6E-01            | 0.48                | 90.1                                  |
| High Mid     | 200                           | 101 - 9<br>101 - 10         | 617<br>618                   | 182<br>182                        | 90.9<br>91.2                      | 182                           | 4.2E-01            | 0.23                | 91.1                                  |
| High Btm     | 200                           | 101 - 11<br>101 - 12        | 619<br>620                   | 179<br>181                        | 89.3<br>90.3                      | 180                           | 1.4E+00            | 0.80                | 89.8                                  |

**Table VI:** A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
**Homogeneity Analysis of the 4/14/2000 Preparations**  
 ( Analyzed 4/17/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| Low Top      | 20                            | 103 - 1                      | 621                          | 18.8                              | 93.9                              | 18.9                          | 1.9E-01   | 1.0                 | 94.5                                  |
|              |                               | 103 - 2                      | 622                          | 19.0                              | 95.2                              |                               |           |                     |                                       |
| Low Btm      | 20                            | 103 - 3                      | 623                          | 18.6                              | 93.1                              | 18.7                          | 1.4E-01   | 0.77                | 93.6                                  |
|              |                               | 103 - 4                      | 624                          | 18.8                              | 94.1                              |                               |           |                     |                                       |
| High Top     | 200                           | 103 - 5                      | 625                          | 191                               | 95.4                              | 191                           | 2.6E-01   | 0.14                | 95.3                                  |
|              |                               | 103 - 6                      | 626                          | 190                               | 95.2                              |                               |           |                     |                                       |
| High Btm     | 200                           | 103 - 7                      | 626                          | 193                               | 96.4                              | 192                           | 1.3E+00   | 0.67                | 95.9                                  |
|              |                               | 103 - 8                      | 627                          | 191                               | 95.5                              |                               |           |                     |                                       |

**Table VII:** A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Homogeneity Analysis of the 4/14/2000 Preparations**  
 (Analyzed 4/19/2000)

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>(%) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>(%) | <u>Mean Conc % of Target</u><br>(%) |
|--------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|---------------------------------|-------------------------------|-----------|-------------------|-------------------------------------|
| Low Top      | 20                            | 114 - 1                      | 650                          | 21.6                              | 108                             | 21.4                          | 3.1E-01   | 1.5               | 107                                 |
|              |                               | 114 - 2                      | 651                          | 21.2                              | 106                             |                               |           |                   |                                     |
| Low Btm      | 20                            | 114 - 3                      | 652                          | 21.0                              | 105                             | 21.0                          | 6.6E-02   | 0.31              | 105                                 |
|              |                               | 114 - 4                      | 653                          | 21.0                              | 105                             |                               |           |                   |                                     |
| High Top     | 200                           | 114 - 5                      | 654                          | 205                               | 103                             | 205                           | 2.7E-01   | 0.13              | 103                                 |
|              |                               | 114 - 6                      | 655                          | 206                               | 103                             |                               |           |                   |                                     |
| High Btm     | 200                           | 114 - 7                      | 655                          | 208                               | 104                             | 207                           | 1.3E+00   | 0.65              | 103                                 |
|              |                               | 114 - 8                      | 656                          | 206                               | 103                             |                               |           |                   |                                     |

**Table VIII:** A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
**Homogeneity Analysis of the 4/14/2000 Preparations**  
(DAY 10 Resuspended)  
( Analyzed 4/24/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| Low Top      | 20                            | 135 - 1                      | 675                          | 19.8                              | 98.8                              | 19.7                          | 1.6E-02   | 0.083               | 98.7                                  |
|              |                               | 135 - 2                      | 676                          | 19.7                              | 98.6                              |                               |           |                     |                                       |
| Low Btm      | 20                            | 135 - 3                      | 677                          | 19.6                              | 98.2                              | 19.6                          | 9.8E-02   | 0.50                | 97.8                                  |
|              |                               | 135 - 4                      | 678                          | 19.5                              | 97.5                              |                               |           |                     |                                       |
| High Top     | 200                           | 135 - 5                      | 679                          | 196                               | 98.0                              | 197                           | 6.1E-01   | 0.31                | 98.3                                  |
|              |                               | 135 - 6                      | 680                          | 197                               | 98.5                              |                               |           |                     |                                       |
| High Btm     | 200                           | 135 - 7                      | 680                          | 196                               | 98.1                              | 196                           | 1.5E-01   | 0.075               | 98.0                                  |
|              |                               | 135 - 8                      | 681                          | 196                               | 98.0                              |                               |           |                     |                                       |

**Table IX:**  
A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
10-Day Stability Analysis of the 4/14/2000 Preparations  
( Analyzed 4/24/2000 )

| <u>Group</u>                                                                                                                   | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>% of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) | <u>Percent of Time Zero</u><br>( % ) |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|-----------------------------|-------------------------------|-----------|---------------------|---------------------------------------|--------------------------------------|
| <u>DAY 0</u>                                                                                                                   |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| Low                                                                                                                            | 20                            | 137 - 1                      | 683                          | 20.2                              | 101                         | 20.1                          | 5.5E-02   | 0.27                | 101                                   |                                      |
|                                                                                                                                |                               | 137 - 2                      | 684                          | 20.1                              | 100                         |                               |           |                     |                                       |                                      |
| High                                                                                                                           | 200                           | 137 - 3                      | 685                          | 192                               | 95.8                        | 193                           | 1.3E+00   | 0.69                | 96.3                                  |                                      |
|                                                                                                                                |                               | 137 - 4                      | 686                          | 194                               | 96.8                        |                               |           |                     |                                       |                                      |
| <u>DAY 10</u>                                                                                                                  |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| Low                                                                                                                            | 20                            | 137 - 5                      | 687                          | 20.2                              | 101                         | 20.1                          | 1.4E-01   | 0.72                | 101                                   | 100                                  |
|                                                                                                                                |                               | 137 - 6                      | 688                          | 20.0                              | 100                         |                               |           |                     |                                       |                                      |
| High                                                                                                                           | 200                           | 137 - 7                      | 689                          | 195                               | 97.5                        | 194                           | 6.5E-01   | 0.33                | 97.2                                  | 101                                  |
|                                                                                                                                |                               | 137 - 8                      | 690                          | 194                               | 97.0                        |                               |           |                     |                                       |                                      |
| <u>Percent of Time Zero = <math>\left( \frac{\text{Mean Concentration}}{\text{Time Zero Mean Conc}} \right)^{*} 100</math></u> |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| Time Zero Conc (mg/mL)                                                                                                         |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| group                                                                                                                          |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| Low                                                                                                                            |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| 20.1                                                                                                                           |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| High                                                                                                                           |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |
| 193                                                                                                                            |                               |                              |                              |                                   |                             |                               |           |                     |                                       |                                      |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Table X: Concentration Analysis of the 4/25/2000 Preparations**  
( Analyzed 4/25/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5      | 0                             | 148 - 1                      | 711                          | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2            | 20                            | 148 - 2                      | 712                          | 20.8                              | 104                               | 21.0                          | 1.8E-01   | 0.87                | 105                                   |
|              |                               | 148 - 3                      | 713                          | 21.1                              | 105                               |                               |           |                     |                                       |
| 3            | 60                            | 148 - 4                      | 714                          | 63.3                              | 105                               | 63.6                          | 4.8E-01   | 0.76                | 106                                   |
|              |                               | 148 - 5                      | 715                          | 64.0                              | 107                               |                               |           |                     |                                       |
| 4 and 6      | 200                           | 148 - 6                      | 716                          | 207                               | 104                               | 207                           | 2.6E-01   | 0.13                | 103                                   |
|              |                               | 148 - 7                      | 717                          | 207                               | 103                               |                               |           |                     |                                       |

A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
**Table XI: Concentration Analysis of the 5/2/2000 Preparations**  
( Analyzed 5/3/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref#</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5      | 0                             | 156 - 1                     | 772                          | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2            | 20                            | 156 - 2                     | 773                          | 19.7                              | 98.3                              | 20.3                          | 8.5E-01   | 4.2                 | 101                                   |
|              |                               | 156 - 3                     | 774                          | 20.9                              | 104                               |                               |           |                     |                                       |
| 3            | 60                            | 156 - 4                     | 775                          | 65.6                              | 109                               | 61.9                          | 5.2E+00   | 8.3                 | 103                                   |
|              |                               | 156 - 5                     | 776                          | 58.3                              | 97.1                              |                               |           |                     |                                       |
| 4 and 6      | 200                           | 156 - 6                     | 777                          | 178                               | 88.8                              | 190                           | 1.7E+01   | 9.1                 | 94.9                                  |
|              |                               | 156 - 7                     | 778                          | 202                               | 101                               |                               |           |                     |                                       |

A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
**Table XII: Concentration Analysis of the 5/9/2000 Preparations**  
 ( Analyzed 5/10/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref#</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5      | 0                             | 171 - 1                     | 839                          | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2            | 20                            | 171 - 2                     | 840                          | 18.5                              | 92.7                              | 18.9                          | 4.6E-01   | 2.4                 | 94.3                                  |
|              |                               | 171 - 3                     | 841                          | 19.2                              | 95.9                              |                               |           |                     |                                       |
| 3            | 60                            | 171 - 4                     | 842                          | 57.6                              | 95.9                              | 57.4                          | 1.7E-01   | 0.29                | 95.7                                  |
|              |                               | 171 - 5                     | 843                          | 57.3                              | 95.5                              |                               |           |                     |                                       |
| 4 and 6      | 200                           | 171 - 6                     | 844                          | 191                               | 95.5                              | 190                           | 8.5E-01   | 0.45                | 95.2                                  |
|              |                               | 171 - 7                     | 845                          | 190                               | 94.9                              |                               |           |                     |                                       |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Table XIII: Concentration Analysis of the 5/16/2000 Preparations**  
( Analyzed 5/16/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref#</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5      | <b>0</b>                      | 186 - 1                     | 872 r                        | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2            | <b>20</b>                     | 186 - 2<br>186 - 3          | 873 r<br>874 r               | 20.7<br>20.7                      | 104<br>104                        | <b>20.7</b>                   | 1.4E-05   | 0.000068            | <b>104</b>                            |
| 3            | <b>60</b>                     | 186 - 4<br>186 - 5          | 875 r<br>876 r               | 61.2<br>62.5                      | 102<br>104                        | <b>61.8</b>                   | 9.5E-01   | 1.5                 | <b>103</b>                            |
| 4 and 6      | <b>200</b>                    | 186 - 6<br>186 - 7          | 877 r<br>878 r               | 205<br>207                        | 102<br>103                        | <b>206</b>                    | 1.1E+00   | 0.55                | <b>103</b>                            |

A 90-DAY ORAL (Gavage) TOXICITY STUDY OF HBCD IN RATS  
**Table XIV: Concentration Analysis of the 6/13/2000 Preparations**  
( Analyzed 6/15/2000 )

| <u>Group</u> | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref #</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|--------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5      | <b>0</b>                      | 204 - 1                      | 928                          | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2            | <b>20</b>                     | 204 - 2                      | 929                          | 20.2                              | 101                               | <b>20.2</b>                   | 9.1E-02   | 0.45                | <b>101</b>                            |
|              |                               | 204 - 3                      | 930                          | 20.1                              | 101                               |                               |           |                     |                                       |
| 3            | <b>60</b>                     | 204 - 4                      | 931                          | 57.6                              | 96.0                              | <b>57.6</b>                   | 1.0E-02   | 0.018               | <b>96.0</b>                           |
|              |                               | 204 - 5                      | 932                          | 57.6                              | 96.0                              |                               |           |                     |                                       |
| 4 and 6      | <b>200</b>                    | 204 - 6                      | 933                          | 189                               | 94.7                              | <b>186</b>                    | 4.3E+00   | 2.3                 | <b>93.2</b>                           |
|              |                               | 204 - 7                      | 934                          | 183                               | 91.7                              |                               |           |                     |                                       |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Table XV: Concentration Analysis of the 7/18/2000 Preparations**  
(Analyzed 7/18/2000 and 7/20/2000)

| <u>Group</u>                      | <u>Dose Conc</u><br>( mg/mL ) | <u>Ref#</u><br>( 186012 - ) | <u>Run #</u><br>( 186012 - ) | <u>Analyzed Conc</u><br>( mg/mL ) | <u>Percent of Target</u><br>( % ) | <u>Mean Conc</u><br>( mg/mL ) | <u>SD</u> | <u>RSD</u><br>( % ) | <u>Mean Conc % of Target</u><br>( % ) |
|-----------------------------------|-------------------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------|---------------------|---------------------------------------|
| 1 and 5                           | 0                             | 215 - 1                     | 956                          | -----                             | Not Detected                      | -----                         | -----     | -----               | -----                                 |
| 2                                 | 20                            | 215 - 2                     | 957                          | 19.3                              | 96.4                              | 20.1                          | 1.2E+00   | 5.9                 | 101                                   |
|                                   |                               | 215 - 3                     | 958                          | 20.9                              | 105                               |                               |           |                     |                                       |
| 3                                 | 60                            | 215 - 4                     | 959                          | 48.6                              | 81.1                              | 55.1                          | 5.6E+00   | 10                  | 91.8                                  |
|                                   |                               | 215 - 5                     | 960                          | 47.6                              | 79.3                              |                               |           |                     |                                       |
|                                   |                               | 221 - 1                     | 984                          | 59.8                              | 99.6                              |                               |           |                     |                                       |
|                                   |                               | 221 - 2                     | 985                          | 60.3                              | 100                               |                               |           |                     |                                       |
| Samples Re-analyzed<br>on 7/20/00 | 221 - 3                       | 986                         | 57.7                         | 96.1                              | 94.0                              |                               |           |                     |                                       |
|                                   | 221 - 4                       | 987                         | 56.4                         |                                   |                                   |                               |           |                     |                                       |
| 4 and 6                           | 200                           | 215 - 6                     | 961                          | 196                               | 98.2                              | 195                           | 2.6E+00   | 1.3                 | 97.3                                  |
|                                   |                               | 215 - 7                     | 962                          | 193                               | 96.4                              |                               |           |                     |                                       |

**Assay Validation and Analysis of Dosing Formulations**

**Assay Validation Supporting Data**

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Standard Information of 4-12-00 Preps (Analyzed 4-12-00)**  
**Validation Set I**

| Std Info | Reference Number<br>( 186012 - ) | Run # | HBCD Conc<br>(mg/mL) | HBCD Area | Response Factor<br>(Area/Conc) |
|----------|----------------------------------|-------|----------------------|-----------|--------------------------------|
|----------|----------------------------------|-------|----------------------|-----------|--------------------------------|

**Front Calibration Standards**

| ( 6.3 min ) |       |     |       |            |          |
|-------------|-------|-----|-------|------------|----------|
| Lv1/Rep1    | 65-1  | 482 | 0.300 | 205.96040  | 6.87E+02 |
| Lv1/Rep2    | 65-2  | 483 | 0.300 | 218.43115  | 7.28E+02 |
| Lv1/Rep3    | 65-3  | 484 | 0.300 | 217.26059  | 7.24E+02 |
| Lv2/Rep1    | 65-4  | 485 | 0.50  | 364.06851  | 7.28E+02 |
| Lv2/Rep2    | 65-5  | 486 | 0.50  | 390.70636  | 7.81E+02 |
| Lv2/Rep3    | 65-6  | 487 | 0.50  | 390.08475  | 7.80E+02 |
| Lv3/Rep1    | 65-7  | 488 | 1.50  | 1095.84497 | 7.31E+02 |
| Lv3/Rep2    | 65-8  | 489 | 1.50  | 1189.36267 | 7.93E+02 |
| Lv3/Rep3    | 65-9  | 490 | 1.50  | 1206.24084 | 8.04E+02 |
| Lv4/Rep1    | 65-10 | 491 | 3.00  | 2257.64990 | 7.53E+02 |
| Lv4/Rep2    | 65-11 | 492 | 3.00  | 2435.12085 | 8.12E+02 |
| Lv4/Rep3    | 65-12 | 493 | 3.00  | 2424.60718 | 8.08E+02 |
| Lv5/Rep1    | 65-13 | 494 | 5.00  | 3661.57764 | 7.32E+02 |
| Lv5/Rep2    | 65-14 | 495 | 5.00  | 3961.28955 | 7.92E+02 |
| Lv5/Rep3    | 65-15 | 496 | 5.00  | 3927.81494 | 7.85E+02 |

**Back Calibration Standards**

| ( 6.3 min ) |       |      |       |            |          |
|-------------|-------|------|-------|------------|----------|
| Lv1/Rep1    | 65-1  | 503R | 0.300 | 211.29691  | 7.04E+02 |
| Lv1/Rep2    | 65-2  | 504R | 0.300 | 220.50011  | 7.35E+02 |
| Lv1/Rep3    | 65-3  | 505R | 0.300 | 218.67378  | 7.29E+02 |
| Lv2/Rep1    | 65-4  | 506R | 0.50  | 370.79718  | 7.42E+02 |
| Lv2/Rep2    | 65-5  | 507R | 0.50  | 392.13290  | 7.84E+02 |
| Lv2/Rep3    | 65-6  | 508R | 0.50  | 389.41345  | 7.79E+02 |
| Lv3/Rep1    | 65-7  | 509R | 1.50  | 1101.73706 | 7.34E+02 |
| Lv3/Rep2    | 65-8  | 510  | 1.50  | 1206.01782 | 8.04E+02 |
| Lv3/Rep3    | 65-9  | 511  | 1.50  | 1214.11499 | 8.09E+02 |
| Lv4/Rep1    | 65-10 | 512  | 3.00  | 2234.23120 | 7.45E+02 |
| Lv4/Rep2    | 65-11 | 513  | 3.00  | 2399.62061 | 8.00E+02 |
| Lv4/Rep3    | 65-12 | 514  | 3.00  | 2370.75928 | 7.90E+02 |
| Lv5/Rep1    | 65-13 | 515  | 5.00  | 3654.60620 | 7.31E+02 |
| Lv5/Rep2    | 65-14 | 516  | 5.00  | 3951.50830 | 7.90E+02 |
| Lv5/Rep3    | 65-15 | 517  | 5.00  | 3941.16064 | 7.88E+02 |

**Average Response Factor** 7.63E+02  
**RSD, %** 5.1

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Regression Calibration Information of 4-12-00 Preps (Analyzed 4-12-00)**  
**Validation Set I**

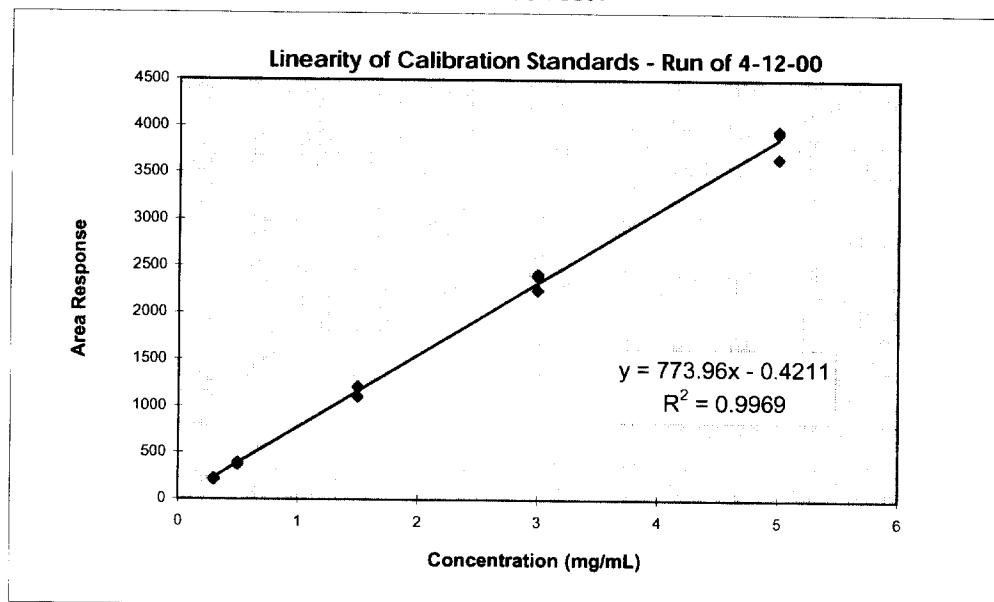
| Reference<br><u>Number</u><br>( 186012 - ) | HBCD<br><u>Conc</u><br>(mg/mL) | Mean<br>HBCD<br><u>Area</u> |
|--------------------------------------------|--------------------------------|-----------------------------|
| 65-1                                       | 0.300                          | 208.62866                   |
| 65-2                                       | 0.300                          | 219.46563                   |
| 65-3                                       | 0.300                          | 217.96719                   |
| 65-4                                       | 0.50                           | 367.43285                   |
| 65-5                                       | 0.50                           | 391.41963                   |
| 65-6                                       | 0.50                           | 389.74910                   |
| 65-7                                       | 1.50                           | 1098.79102                  |
| 65-8                                       | 1.50                           | 1197.69025                  |
| 65-9                                       | 1.50                           | 1210.17792                  |
| 65-10                                      | 3.00                           | 2245.94055                  |
| 65-11                                      | 3.00                           | 2417.37073                  |
| 65-12                                      | 3.00                           | 2397.68323                  |
| 65-13                                      | 5.00                           | 3658.09192                  |
| 65-14                                      | 5.00                           | 3956.39893                  |
| 65-15                                      | 5.00                           | 3934.48779                  |

| Summary of Regression Statistics |             |
|----------------------------------|-------------|
| Slope =                          | 773.9575959 |
| Intercept =                      | -0.42108148 |
| r =                              | 0.9984441   |
| # of Stds Used =                 | 15          |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RAIS  
**Concentration Analysis of the 4-12-00 Calibration Standards (Analyzed 4-12-00)**  
**Validation Set I**

| Sample | Theo. Conc (mg/mL) | Reference # (186012 - ) | Back-Calculated Concentration (mg/mL) | Percent Relative Error (%) | Mean Conc (mg/mL) | SD     | RSD (%) | Mean % Rel. Error (%) |
|--------|--------------------|-------------------------|---------------------------------------|----------------------------|-------------------|--------|---------|-----------------------|
| Std #1 | <b>0.300</b>       | 65-1<br>65-2<br>65-3    | 0.270<br>0.284<br>0.282               | -10<br>-5.3<br>-5.9        | <b>0.279</b>      | 0.0076 | 2.7     | <b>-7.1</b>           |
| Std #2 | <b>0.500</b>       | 65-4<br>65-5<br>65-6    | 0.475<br>0.506<br>0.504               | -4.9<br>1.3<br>0.82        | <b>0.495</b>      | 0.017  | 3.5     | <b>-1.0</b>           |
| Std #3 | <b>1.50</b>        | 65-7<br>65-8<br>65-9    | 1.42<br>1.55<br>1.56                  | -5.3<br>3.2<br>4.3         | <b>1.51</b>       | 0.079  | 5.2     | <b>0.72</b>           |
| Std #4 | <b>3.00</b>        | 65-10<br>65-11<br>65-12 | 2.90<br>3.12<br>3.10                  | -3.3<br>4.1<br>3.3         | <b>3.04</b>       | 0.12   | 4.0     | <b>1.4</b>            |
| Std #5 | <b>5.00</b>        | 65-13<br>65-14<br>65-15 | 4.73<br>5.11<br>5.08                  | -5.5<br>2.2<br>1.7         | <b>4.97</b>       | 0.21   | 4.3     | <b>-0.53</b>          |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Regression Calibration Information of 4-12-00 Preps (Analyzed 4-12-00)**  
**Validation Set I**



$$* \% \text{ Relative Error} = \left( \frac{\text{Analyzed Conc} - \text{Theo Conc}}{\text{Theoretical Conc}} \right) * 100$$

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Calculation Results - QC Samples 4-12-00 (Analyzed 4-12-00)**  
**Validation Set I**

| Reference<br><u>Number</u><br>( 186012 - ) | Run<br><u>#</u> | HBCD<br><u>Area</u><br>( 6.3 min ) | Analyzed                       |                        |                           |
|--------------------------------------------|-----------------|------------------------------------|--------------------------------|------------------------|---------------------------|
|                                            |                 |                                    | HBCD<br><u>Conc</u><br>(mg/ml) | Multi<br><u>Factor</u> | <u>Sample Description</u> |
| 67-1                                       | 497R            | 290.58609                          | 18.8                           | 50                     | LQC                       |
| 67-2                                       | 498R            | 313.97531                          | 20.3                           | 50                     | "                         |
| 67-3                                       | 499             | 322.88379                          | 20.9                           | 50                     | "                         |
| 67-4                                       | 500             | 2931.25098                         | 189                            | 50                     | HQC                       |
| 67-5                                       | 501             | 3082.79883                         | 199                            | 50                     | "                         |
| 67-6                                       | 502             | 3067.95801                         | 198                            | 50                     | "                         |

This data used to calculate multiplication factors.

| GROUP | Dose Conc | Dilution Conc | Recovery |
|-------|-----------|---------------|----------|
|       | ( mg/mL ) | (mg/ml)       | (%)      |
| LQC   | 20.0      | 0.400         | 100      |
| HQC   | 200       | 4.00          | 100      |

$$\text{Multi - Factor} = \frac{\text{Dose Concentration}}{\text{Dilution Concentration} * \text{Recovery (or Purity)}}$$

WIL-186012  
CMA-BFRIP

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RAIS  
**Concentration Calculation Results - QC Samples 4-12-00 (Analyzed 4-12-00)**  
**Validation Set I**

| Sample | Theo.<br><b>Conc</b><br>(mg/ml) | Reference<br>Number<br>( 186012 - ) | Run<br># | Analyzed<br>Concentration<br>(mg/ml) | Percent                  |                         | Mean<br><b>Conc</b><br>(mg/ml) | SD  | RSD | <b>Mean %<br/>Rel. Error</b><br>(%) |
|--------|---------------------------------|-------------------------------------|----------|--------------------------------------|--------------------------|-------------------------|--------------------------------|-----|-----|-------------------------------------|
|        |                                 |                                     |          |                                      | Relative<br>Error<br>(%) | Mean<br>Conc<br>(mg/ml) |                                |     |     |                                     |
| LQC    | <b>20.0</b>                     | 67-1                                | 497R     | 18.8                                 | -6.0                     | <b>20.0</b>             | 1.1                            | 5.4 | -   | <b>-0.011</b>                       |
|        |                                 | 67-2                                | 498R     | 20.3                                 | 1.5                      |                         |                                |     |     |                                     |
|        |                                 | 67-3                                | 499      | 20.9                                 | 4.4                      |                         |                                |     |     |                                     |
| HQC    | <b>200</b>                      | 67-4                                | 500      | 189                                  | -5.3                     | <b>196</b>              | 5.4                            | 2.8 | -   | <b>-2.2</b>                         |
|        |                                 | 67-5                                | 501      | 199                                  | -0.41                    |                         |                                |     |     |                                     |
|        |                                 | 67-6                                | 502      | 198                                  | -0.89                    |                         |                                |     |     |                                     |

WIL-186012  
CMA-BFRIP

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Standard Information of 4-13-00 Preps (Analyzed 4-13-00)**  
**Validation Set II**

| Std<br>Info | Reference<br>Number<br>( 186012 - ) | Run<br># | HBCD<br>Conc<br>(mg/mL) | HBCD<br>Area | Response<br>Factor<br>(Area/Conc) |
|-------------|-------------------------------------|----------|-------------------------|--------------|-----------------------------------|
|-------------|-------------------------------------|----------|-------------------------|--------------|-----------------------------------|

**Front Calibration Standards**

|          |       |     |       | ( 6.3 min ) |          |
|----------|-------|-----|-------|-------------|----------|
| Lv1/Rep1 | 75-1  | 518 | 0.300 | 219.07106   | 7.30E+02 |
| Lv1/Rep2 | 75-2  | 519 | 0.300 | 220.36392   | 7.35E+02 |
| Lv1/Rep3 | 75-3  | 520 | 0.300 | 221.26804   | 7.38E+02 |
| Lv2/Rep1 | 75-4  | 521 | 0.50  | 376.14734   | 7.52E+02 |
| Lv2/Rep2 | 75-5  | 522 | 0.50  | 379.91119   | 7.60E+02 |
| Lv2/Rep3 | 75-6  | 523 | 0.50  | 378.43332   | 7.57E+02 |
| Lv3/Rep1 | 75-7  | 524 | 1.50  | 1126.46448  | 7.51E+02 |
| Lv3/Rep2 | 75-8  | 525 | 1.50  | 1127.12988  | 7.51E+02 |
| Lv3/Rep3 | 75-9  | 526 | 1.50  | 1128.06873  | 7.52E+02 |
| Lv4/Rep1 | 75-10 | 527 | 3.00  | 2312.49072  | 7.71E+02 |
| Lv4/Rep2 | 75-11 | 528 | 3.00  | 2323.94287  | 7.75E+02 |
| Lv4/Rep3 | 75-12 | 529 | 3.00  | 2333.72314  | 7.78E+02 |
| Lv5/Rep1 | 75-13 | 530 | 5.00  | 3799.25171  | 7.60E+02 |
| Lv5/Rep2 | 75-14 | 531 | 5.00  | 3817.51514  | 7.63E+02 |
| Lv5/Rep3 | 75-15 | 532 | 5.00  | 3808.71680  | 7.62E+02 |

**Back Calibration Standards**

|          |       |     |       | ( 6.3 min ) |          |
|----------|-------|-----|-------|-------------|----------|
| Lv1/Rep1 | 75-1  | 542 | 0.300 | 236.93854   | 7.90E+02 |
| Lv1/Rep2 | 75-2  | 543 | 0.300 | 239.67816   | 7.99E+02 |
| Lv1/Rep3 | 75-3  | 544 | 0.300 | 239.94511   | 8.00E+02 |
| Lv2/Rep1 | 75-4  | 545 | 0.50  | 392.31970   | 7.85E+02 |
| Lv2/Rep2 | 75-5  | 546 | 0.50  | 393.10791   | 7.86E+02 |
| Lv2/Rep3 | 75-6  | 547 | 0.50  | 387.38232   | 7.75E+02 |
| Lv3/Rep1 | 75-7  | 548 | 1.50  | 1119.37085  | 7.46E+02 |
| Lv3/Rep2 | 75-8  | 549 | 1.50  | 1119.88440  | 7.47E+02 |
| Lv3/Rep3 | 75-9  | 550 | 1.50  | 1124.93030  | 7.50E+02 |
| Lv4/Rep1 | 75-10 | 551 | 3.00  | 2286.34692  | 7.62E+02 |
| Lv4/Rep2 | 75-11 | 552 | 3.00  | 2277.10962  | 7.59E+02 |
| Lv4/Rep3 | 75-12 | 553 | 3.00  | 2290.80347  | 7.64E+02 |
| Lv5/Rep1 | 75-13 | 554 | 5.00  | 3732.52661  | 7.46E+02 |
| Lv5/Rep2 | 75-14 | 555 | 5.00  | 3703.53979  | 7.41E+02 |
| Lv5/Rep3 | 75-15 | 556 | 5.00  | 3715.77026  | 7.43E+02 |

**Average Response Factor**      7.56E+02  
**RSD, %**      1.8

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WIL-186012  
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A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Regression Calibration Information of 4-13-00 Preps (Analyzed 4-13-00)**  
**Validation Set II**

| <u>Reference Number</u><br>( 186012 - ) | HBCD<br><u>Conc</u><br>(mg/mL) | Mean<br>HBCD<br><u>Area</u> |
|-----------------------------------------|--------------------------------|-----------------------------|
| 75-1                                    | 0.300                          | 228.00480                   |
| 75-2                                    | 0.300                          | 230.02104                   |
| 75-3                                    | 0.300                          | 230.60658                   |
| 75-4                                    | 0.50                           | 384.23352                   |
| 75-5                                    | 0.50                           | 386.50955                   |
| 75-6                                    | 0.50                           | 382.90782                   |
| 75-7                                    | 1.50                           | 1122.91767                  |
| 75-8                                    | 1.50                           | 1123.50714                  |
| 75-9                                    | 1.50                           | 1126.49952                  |
| 75-10                                   | 3.00                           | 2299.41882                  |
| 75-11                                   | 3.00                           | 2300.52625                  |
| 75-12                                   | 3.00                           | 2312.26331                  |
| 75-13                                   | 5.00                           | 3765.88916                  |
| 75-14                                   | 5.00                           | 3760.52747                  |
| 75-15                                   | 5.00                           | 3762.24353                  |

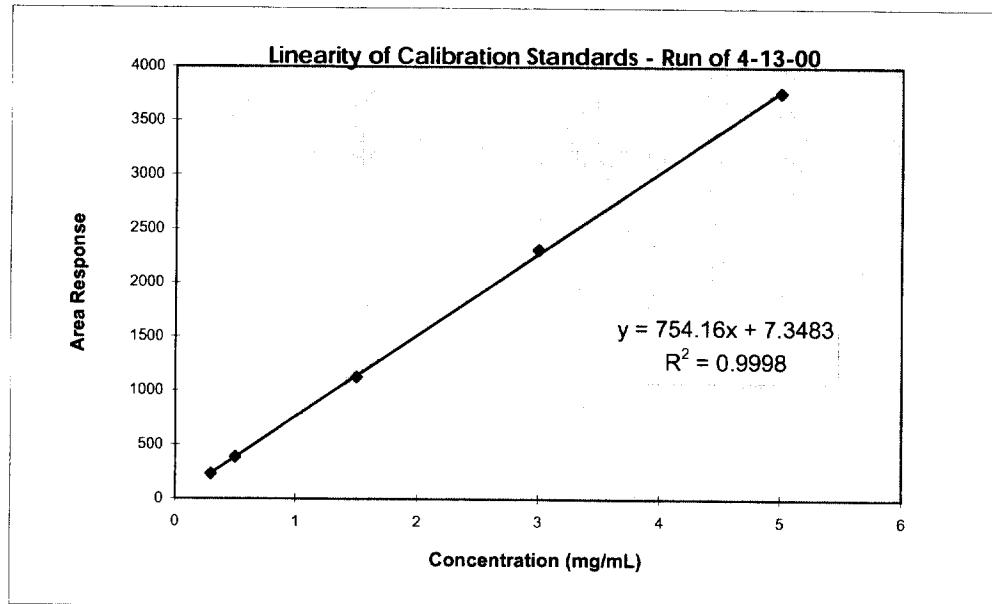
| Summary of Regression Statistics |             |
|----------------------------------|-------------|
| Slope =                          | 754.1614817 |
| Intercept =                      | 7.348258654 |
| r =                              | 0.999903173 |
| # of Stds Used =                 | 15          |

WIL-186012  
CMA-BFRIP

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Analysis of the 4-13-00 Calibration Standards (Analyzed 4-13-00)**  
**Validation Set II**

| <u>Sample</u> | <u>Theo.<br/>Conc</u><br>(mg/mL) | Reference<br><u>#</u><br>( 186012 - ) | Back-Calculated<br><u>Concentration</u><br>(mg/mL) | Percent<br>Relative<br>Error<br>(%) | <u>Mean<br/>Conc</u><br>(mg/mL) | SD     | RSD<br>(%) | <u>Mean %<br/>Rel. Error</u><br>(%) |
|---------------|----------------------------------|---------------------------------------|----------------------------------------------------|-------------------------------------|---------------------------------|--------|------------|-------------------------------------|
| Std #1        | <b>0.300</b>                     | 75-1<br>75-2<br>75-3                  | 0.293<br>0.295<br>0.296                            | -2.5<br>-1.6<br>-1.3                | <b>0.295</b>                    | 0.0018 | 0.61       | <b>-1.8</b>                         |
| Std #2        | <b>0.500</b>                     | 75-4<br>75-5<br>75-6                  | 0.500<br>0.503<br>0.498                            | -0.052<br>0.55<br>-0.40             | <b>0.500</b>                    | 0.0024 | 0.48       | <b>0.032</b>                        |
| Std #3        | <b>1.50</b>                      | 75-7<br>75-8<br>75-9                  | 1.48<br>1.48<br>1.48                               | -1.4<br>-1.3<br>-1.1                | <b>1.48</b>                     | 0.0025 | 0.17       | <b>-1.3</b>                         |
| Std #4        | <b>3.00</b>                      | 75-10<br>75-11<br>75-12               | 3.04<br>3.04<br>3.06                               | 1.3<br>1.4<br>1.9                   | <b>3.05</b>                     | 0.0094 | 0.31       | <b>1.5</b>                          |
| Std #5        | <b>5.00</b>                      | 75-13<br>75-14<br>75-15               | 4.98<br>4.98<br>4.98                               | -0.35<br>-0.49<br>-0.44             | <b>4.98</b>                     | 0.0036 | 0.073      | <b>-0.42</b>                        |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Regression Calibration Information of 4-13-00 Preps (Analyzed 4-13-00)**  
**Validation Set II**



$$* \% \text{ Relative Error} = \left( \frac{\text{Analyzed Conc} - \text{Theo Conc}}{\text{Theoretical Conc}} \right) * 100$$

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Calculation Results - QC Samples 4-13-00 (Analyzed 4-13-00)**  
**Validation Set II**

| Reference<br><u>Number</u><br>( 186012 - ) | Run<br><u>#</u> | Analyzed                           |                     |                 | <u>Sample Description</u> |
|--------------------------------------------|-----------------|------------------------------------|---------------------|-----------------|---------------------------|
|                                            |                 | HBCD<br><u>Area</u><br>( 6.3 min ) | HBCD<br><u>Conc</u> | Multi<br>Factor |                           |
| 77-1                                       | 533             | 353.26202                          | 22.9                | 50              | LQC                       |
| 77-2                                       | 534             | 354.57147                          | 23.0                | 50              | "                         |
| 77-3                                       | 535             | 322.27600                          | 20.9                | 50              | "                         |
| 77-4                                       | 536             | 2973.51099                         | 197                 | 50              | HQC                       |
| 77-5                                       | 537             | 2984.70117                         | 197                 | 50              | "                         |
| 77-6                                       | 538             | 2961.28027                         | 196                 | 50              | "                         |
| 83-1                                       | 539             | 2913.35742                         | 193                 | 50              | HQC                       |
| 83-2                                       | 540             | 2855.53564                         | 189                 | 50              | "                         |
| 83-3                                       | 541             | 2892.27026                         | 191                 | 50              | "                         |

This data used to calculate multiplication factors.

| GROUP | Dose Conc | Dilution Conc | Recovery |
|-------|-----------|---------------|----------|
|       | ( mg/mL ) | (mg/ml)       | (%)      |
| LQC   | 20.0      | 0.400         | 100      |
| HQC   | 200       | 4.00          | 100      |

$$\text{Multi - Factor} = \frac{\text{Dose Concentration}}{\text{Dilution Concentration} * \text{Recovery (or Purity)}}$$

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Calculation Results - QC Samples 4-13-00 (Analyzed 4-13-00)**  
**Validation Set II**

| Sample                         | Theo.<br><u>Conc</u><br>(mg/ml) | Reference<br>Number<br>( 186012 - ) | Run<br># | Analyzed<br>Concentration<br>(mg/ml) | Percent<br>Relative<br>Error<br>(%) |    | Mean<br><u>Conc</u><br>(mg/ml) | SD   | RSD<br>(%) | <b>Mean %<br/>Rel. Error<br/>(%)</b> |
|--------------------------------|---------------------------------|-------------------------------------|----------|--------------------------------------|-------------------------------------|----|--------------------------------|------|------------|--------------------------------------|
|                                |                                 |                                     |          |                                      | Mean<br>Conc<br>(mg/ml)             | SD |                                |      |            |                                      |
| LQC                            | <b>20.0</b>                     | 77-1                                | 533      | 22.9                                 | 15                                  |    | <b>22.3</b>                    | 1.2  | 5.4        | <b>11</b>                            |
|                                |                                 | 77-2                                | 534      | 23.0                                 | 15                                  |    |                                |      |            |                                      |
|                                |                                 | 77-3                                | 535      | 20.9                                 | 4.4                                 |    |                                |      |            |                                      |
| HQC                            | <b>200</b>                      | 77-4                                | 536      | 197                                  | -1.7                                |    | <b>197</b>                     | 0.78 | 0.39       | <b>-1.7</b>                          |
|                                |                                 | 77-5                                | 537      | 197                                  | -1.3                                |    |                                |      |            |                                      |
|                                |                                 | 77-6                                | 538      | 196                                  | -2.1                                |    |                                |      |            |                                      |
| <b>QC prepared by pharmacy</b> |                                 |                                     |          |                                      |                                     |    |                                |      |            |                                      |
| HQC                            | <b>200</b>                      | 83-1                                | 539      | 193                                  | -3.7                                |    | <b>191</b>                     | 1.94 | 1.02       | <b>-4.5</b>                          |
|                                |                                 | 83-2                                | 540      | 189                                  | -5.6                                |    |                                |      |            |                                      |
|                                |                                 | 83-3                                | 541      | 191                                  | -4.4                                |    |                                |      |            |                                      |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Standard Information of 4-13-00 Preps (Analyzed 4-13-00)**  
**Validation Set III**

| Std Info | Reference Number<br>( 186012 - ) | Run # | HBCD Conc<br>(mg/ml) | HBCD Area | Response Factor<br>(Area/Conc) |
|----------|----------------------------------|-------|----------------------|-----------|--------------------------------|
|----------|----------------------------------|-------|----------------------|-----------|--------------------------------|

**Front Calibration Standards**

| ( 6.3 min ) |       |     |       |            |          |
|-------------|-------|-----|-------|------------|----------|
| Lv1/Rep1    | 79-1  | 557 | 0.300 | 223.73825  | 7.46E+02 |
| Lv1/Rep2    | 79-2  | 558 | 0.300 | 223.66386  | 7.46E+02 |
| Lv1/Rep3    | 79-3  | 559 | 0.300 | 223.74609  | 7.46E+02 |
| Lv2/Rep1    | 79-4  | 560 | 0.50  | 375.32843  | 7.51E+02 |
| Lv2/Rep2    | 79-5  | 561 | 0.50  | 381.05090  | 7.62E+02 |
| Lv2/Rep3    | 79-6  | 562 | 0.50  | 378.08337  | 7.56E+02 |
| Lv3/Rep1    | 79-7  | 563 | 1.50  | 1125.85693 | 7.51E+02 |
| Lv3/Rep2    | 79-8  | 564 | 1.50  | 1129.92517 | 7.53E+02 |
| Lv3/Rep3    | 79-9  | 565 | 1.50  | 1146.79102 | 7.65E+02 |
| Lv4/Rep1    | 79-10 | 566 | 3.00  | 2278.01147 | 7.59E+02 |
| Lv4/Rep2    | 79-11 | 567 | 3.00  | 2289.79077 | 7.63E+02 |
| Lv4/Rep3    | 79-12 | 568 | 3.00  | 2312.35913 | 7.71E+02 |
| Lv5/Rep1    | 79-13 | 569 | 5.00  | 3805.69702 | 7.61E+02 |
| Lv5/Rep2    | 79-14 | 570 | 5.00  | 3803.96973 | 7.61E+02 |
| Lv5/Rep3    | 79-15 | 571 | 5.00  | 3737.63159 | 7.47E+02 |

**Back Calibration Standards**

| ( 6.3 min ) |       |     |       |            |          |
|-------------|-------|-----|-------|------------|----------|
| Lv1/Rep1    | 79-1  | 578 | 0.300 | 258.17804  | 8.61E+02 |
| Lv1/Rep2    | 79-2  | 579 | 0.300 | 274.12762  | 9.14E+02 |
| Lv1/Rep3    | 79-3  | 580 | 0.300 | 264.25311  | 8.81E+02 |
| Lv2/Rep1    | 79-4  | 581 | 0.50  | 446.08752  | 8.92E+02 |
| Lv2/Rep2    | 79-5  | 582 | 0.50  | 424.92288  | 8.50E+02 |
| Lv2/Rep3    | 79-6  | 583 | 0.50  | 420.66928  | 8.41E+02 |
| Lv3/Rep1    | 79-7  | 584 | 1.50  | 1211.67773 | 8.08E+02 |
| Lv3/Rep2    | 79-8  | 585 | 1.50  | 1210.74829 | 8.07E+02 |
| Lv3/Rep3    | 79-9  | 586 | 1.50  | 1177.92273 | 7.85E+02 |
| Lv4/Rep1    | 79-10 | 587 | 3.00  | 2285.39282 | 7.62E+02 |
| Lv4/Rep2    | 79-11 | 588 | 3.00  | 2295.92847 | 7.65E+02 |
| Lv4/Rep3    | 79-12 | 589 | 3.00  | 2339.23291 | 7.80E+02 |
| Lv5/Rep1    | 79-13 | 590 | 5.00  | 3758.34937 | 7.52E+02 |
| Lv5/Rep2    | 79-14 | 591 | 5.00  | 3798.67993 | 7.60E+02 |
| Lv5/Rep3    | 79-15 | 592 | 5.00  | 3730.91284 | 7.46E+02 |

|                                |          |
|--------------------------------|----------|
| <b>Average Response Factor</b> | 7.56E+02 |
| <b>RSD, %</b>                  | 1.1      |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Regression Calibration Information of 4-13-00 Preps (Analyzed 4-13-00)**  
**Validation Set III**

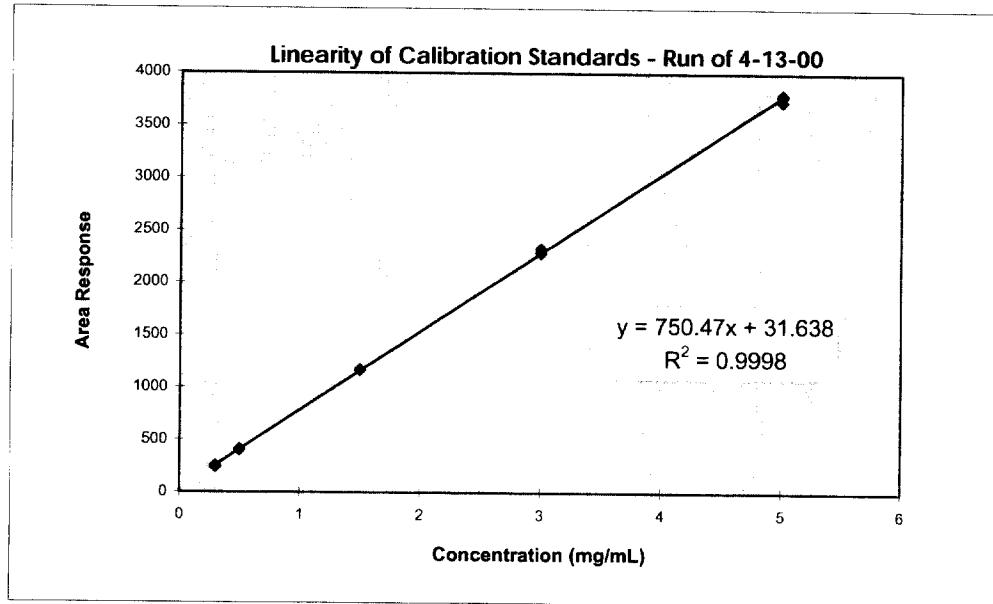
| Reference<br><u>Number</u><br>( 186012 - ) | HBCD<br><u>Conc</u><br>(mg/mL) | Mean<br>HBCD<br><u>Area</u> |
|--------------------------------------------|--------------------------------|-----------------------------|
| 79-1                                       | 0.300                          | 240.95815                   |
| 79-2                                       | 0.300                          | 248.89574                   |
| 79-3                                       | 0.300                          | 243.99960                   |
| 79-4                                       | 0.50                           | 410.70798                   |
| 79-5                                       | 0.50                           | 402.98689                   |
| 79-6                                       | 0.50                           | 399.37633                   |
| 79-7                                       | 1.50                           | 1168.76733                  |
| 79-8                                       | 1.50                           | 1170.33673                  |
| 79-9                                       | 1.50                           | 1162.35688                  |
| 79-10                                      | 3.00                           | 2281.70215                  |
| 79-11                                      | 3.00                           | 2292.85962                  |
| 79-12                                      | 3.00                           | 2325.79602                  |
| 79-13                                      | 5.00                           | 3782.02320                  |
| 79-14                                      | 5.00                           | 3801.32483                  |
| 79-15                                      | 5.00                           | 3734.27222                  |

| Summary of Regression Statistics |             |
|----------------------------------|-------------|
| Slope =                          | 750.4703955 |
| Intercept =                      | 31.63846687 |
| r =                              | 0.999891464 |
| # of Stds Used =                 | 15          |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Analysis of the 4-13-00 Calibration Standards (Analyzed 4-13-00)**  
**Validation Set III**

| Sample | Theo. Conc<br>(mg/mL) | Reference #<br>(186012 - ) | Back-Calculated Concentration<br>(mg/mL) | Percent Relative Error<br>(%) | Mean Conc<br>(mg/mL) | SD     | RSD<br>(%) | Mean % Rel. Error<br>(%) |
|--------|-----------------------|----------------------------|------------------------------------------|-------------------------------|----------------------|--------|------------|--------------------------|
| Std #1 | <b>0.300</b>          | 79-1<br>79-2<br>79-3       | 0.279<br>0.289<br>0.283                  | -7.0<br>-3.5<br>-5.7          | <b>0.284</b>         | 0.0053 | 1.9        | <b>-5.4</b>              |
| Std #2 | <b>0.500</b>          | 79-4<br>79-5<br>79-6       | 0.505<br>0.495<br>0.490                  | 1.0<br>-1.0<br>-2.0           | <b>0.497</b>         | 0.0077 | 1.6        | <b>-0.67</b>             |
| Std #3 | <b>1.50</b>           | 79-7<br>79-8<br>79-9       | 1.52<br>1.52<br>1.51                     | 1.0<br>1.2<br>0.45            | <b>1.51</b>          | 0.0056 | 0.37       | <b>0.87</b>              |
| Std #4 | <b>3.00</b>           | 79-10<br>79-11<br>79-12    | 3.00<br>3.01<br>3.06                     | -0.060<br>0.44<br>1.9         | <b>3.02</b>          | 0.031  | 1.0        | <b>0.76</b>              |
| Std #5 | <b>5.00</b>           | 79-13<br>79-14<br>79-15    | 5.00<br>5.02<br>4.93                     | -0.072<br>0.44<br>-1.3        | <b>4.98</b>          | 0.046  | 0.92       | <b>-0.33</b>             |

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
Regression Calibration Information of 4-13-00 Preps (Analyzed 4-13-00)  
Validation Set III



$$*\% \text{ Relative Error} = \left( \frac{\text{Analyzed Conc} - \text{Theo Conc}}{\text{Theoretical Conc}} \right) * 100$$

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Calculation Results - QC Samples 4-13-00 (Analyzed 4-13-00)**  
**Validation Set III**

| Reference<br><u>Number</u><br>( 186012 - ) | Run<br><u>#</u> | HBCD<br><u>Area</u><br>( 6.3 min ) | Analyzed            |                        |                           |
|--------------------------------------------|-----------------|------------------------------------|---------------------|------------------------|---------------------------|
|                                            |                 |                                    | HBCD<br><u>Conc</u> | Multi<br><u>Factor</u> | <u>Sample Description</u> |
| 81-1                                       | 572             | 329.61633                          | 19.9                | 50                     | LQC                       |
| 81-2                                       | 573             | 330.04526                          | 19.9                | 50                     | "                         |
| 81-3                                       | 574             | 331.92099                          | 20.0                | 50                     | "                         |
| 81-4                                       | 575             | 2719.70459                         | 179                 | 50                     | HQC                       |
| 81-5                                       | 576             | 2914.80908                         | 192                 | 50                     | "                         |
| 81-6                                       | 577             | 2945.42285                         | 194                 | 50                     | "                         |

This data used to calculate multiplication factors.

| GROUP | Dose Conc | Dilution Conc | Recovery |
|-------|-----------|---------------|----------|
|       | ( mg/mL ) | (mg/ml)       | (%)      |
| LQC   | 20.0      | 0.400         | 100      |
| HQC   | 200       | 4.00          | 100      |

$$\text{Multi - Factor} = \frac{\text{Dose Concentration}}{\text{Dilution Concentration} * \text{Recovery (or Purity)}}$$

A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS  
**Concentration Calculation Results - QC Samples 4-13-00 (Analyzed 4-13-00)**  
**Validation Set III**

| Sample | Theo.<br><u>Conc</u><br>(mg/ml) | Reference<br>Number<br>( 186012 - ) | Run<br># | Analyzed<br>Concentration<br>(mg/ml) | Relative<br>Error<br>(%) | Percent                        |       |            | Mean %<br><u>Rel. Error</u><br>(%) |
|--------|---------------------------------|-------------------------------------|----------|--------------------------------------|--------------------------|--------------------------------|-------|------------|------------------------------------|
|        |                                 |                                     |          |                                      |                          | Mean<br><u>Conc</u><br>(mg/ml) | SD    | RSD<br>(%) |                                    |
| LQC    | <b>20.0</b>                     | 81-1                                | 572      | 19.9                                 | -0.74                    | <b>19.9</b>                    | 0.082 | 0.41       | <b>-0.44</b>                       |
|        |                                 | 81-2                                | 573      | 19.9                                 | -0.61                    |                                |       |            |                                    |
|        |                                 | 81-3                                | 574      | 20.0                                 | 0.031                    |                                |       |            |                                    |
| HQC    | <b>200</b>                      | 81-4                                | 575      | 179                                  | -10                      | <b>188</b>                     | 8.2   | 4.3        | <b>-5.8</b>                        |
|        |                                 | 81-5                                | 576      | 192                                  | -4.0                     |                                |       |            |                                    |
|        |                                 | 81-6                                | 577      | 194                                  | -2.9                     |                                |       |            |                                    |

WIL-186012  
CMA-BFRIP

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**APPENDIX C**

**Pretest Clinical Observations**

PROJECT NO :WIL-186012P  
SPONSOR :CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS : TOTAL OCCURRENCE/NO. OF ANIMALS

PAGE 1

| TABLE RANGE:                 |                                       | M A L E |         |
|------------------------------|---------------------------------------|---------|---------|
| GROUP:                       | 04-11-00 TO 04-25-00                  | 1       |         |
| NORMAL                       | -NO SIGNIFICANT CLINICAL OBSERVATIONS |         | 258/121 |
| BODY/INTEGUMENT              |                                       |         |         |
| -HAIR LOSS DORSAL HEAD       |                                       | 1/ 1    |         |
| -HAIR LOSS FORELIMB (S)      |                                       | 1/ 1    |         |
| BODY/INTEG II                |                                       |         |         |
| -SCABBING LEFT LATERAL NECK  |                                       | 1/ 1    |         |
| -SCABBING DORSAL HEAD        |                                       | 4/ 2    |         |
| -SCABBING RIGHT LATERAL NECK |                                       | 1/ 1    |         |
| 1- PRETEST                   |                                       |         |         |

PROJECT NO.: WIL-186012P  
SPONSOR: CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
SUMMARY OF CLINICAL FINDINGS: TOTAL OCCURRENCE/NO. OF ANIMALS

PAGE 2

- - - - F E M A L E - - - -  
TABLE RANGE: 04-11-00 TO 04-25-00  
GROUP: 1  
- - - - 265/122 - - - -  
NORMAL  
-NO SIGNIFICANT CLINICAL OBSERVATIONS  
1 - PRETEST

PCSUv4.0  
03/12/2001  
R:07/18/2001

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX D**

Dispositions and Body Weights (Satellite Groups)



PROJECT NO :WIL-186012S  
SPONSOR :CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| ANIMAL | WEEK | MALE |           |           |           |           |      | GROUP: 1000 MG/KG/DAY | 6 |
|--------|------|------|-----------|-----------|-----------|-----------|------|-----------------------|---|
|        |      | -1   | 0         | 1         | 2         | 3         | 4    |                       |   |
| 43286  | 217. | 255. | SCHEDULED | EUTH      | WEEK      | 0         |      |                       |   |
| 43287  | 225. | 267. | SCHEDULED | EUTH      | WEEK      | 0         |      |                       |   |
| 43291  | 211. | 248. | 313.      | SCHEDULED | EUTH      | WEEK      | 0    |                       |   |
| 43294  | 223. | 253. | 311.      | SCHEDULED | EUTH      | WEEK      | 0    |                       |   |
| 43298  | 188. | 228. | 289.      | SCHEDULED | EUTH      | WEEK      | 1    |                       |   |
| 43299  | 214. | 247. | 307.      | SCHEDULED | EUTH      | WEEK      | 1    |                       |   |
| 43302  | 212. | 253. | 320.      | 377.      | SCHEDULED | EUTH      | WEEK | 1                     |   |
| 43304  | 197. | 240. | 309.      | 360.      | SCHEDULED | EUTH      | WEEK | 1                     |   |
| 43314  | 192. | 229. | 286.      | 335.      | 382.      | SCHEDULED | EUTH | WEEK                  | 2 |
| 43321  | 211. | 244. | 306.      | 353.      | 387.      | SCHEDULED | EUTH | WEEK                  | 2 |
| 43324  | 207. | 242. | 296.      | 334.      | 375.      | SCHEDULED | EUTH | WEEK                  | 3 |
| 43333  | 182. | 208. | 261.      | 297.      | 336.      | SCHEDULED | EUTH | WEEK                  | 3 |
| 43343  | 218. | 253. | 315.      | 356.      | 384.      | SCHEDULED | EUTH | WEEK                  | 3 |
| 43352  | 190. | 224. | 281.      | 324.      | 360.      | 373.      | 403. | 429.                  |   |
| 43353  | 195. | 229. | 290.      | 324.      | 352.      | 378.      | 393. | 415.                  |   |
| 43356  | 184. | 211. | 258.      | 296.      | 316.      | 327.      | 338. | 357.                  |   |
| 43357  | 215. | 251. | 310.      | 357.      | 398.      | 420.      | 440. | 469.                  |   |
| 43360  | 230. | 266. | 331.      | 384.      | 428.      | 458.      | 489. | 514.                  |   |
| 43374  | 204. | 239. | 298.      | 330.      | 351.      | 361.      | 375. | 394.                  |   |
| 43393  | 202. | 243. | 306.      | 358.      | 398.      | 432.      | 448. | 472.                  |   |
| MEAN   | 206. | 242. | 299.      | 342.      | 372.      | 391.      | 410. | 435.                  |   |
| S.D.   | 14.1 | 16.0 | 19.2      | 26.5      | 30.7      | 38.5      | 47.2 | 49.3                  |   |
| N      | 20   | 20   | 18        | 14        | 12        | 10        | 8    | 8                     |   |

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| WEEK   | 7    | 8    | 9         | 10   | MALE | GROUP: | 0 MG/KG/DAY |    |    | 13 | 14 |
|--------|------|------|-----------|------|------|--------|-------------|----|----|----|----|
|        |      |      |           |      |      |        | 11          | 12 | 11 |    |    |
| <hr/>  |      |      |           |      |      |        |             |    |    |    |    |
| ANIMAL |      |      | SCHEDULED | EUTH | WEEK | 7      |             |    |    |    |    |
| 43367  | 410. | 431. | 468.      | 479. | 492. |        | 503.        |    |    |    |    |
| 43370  | 449. | 465. | 473.      | 487. | 500. |        | 506.        |    |    |    |    |
| 43375  | 456. | 456. | 472.      | 487. | 500. |        | 475.        |    |    |    |    |
| 43387  | 456. | 456. | 472.      | 487. | 500. |        | 475.        |    |    |    |    |
| 43389  | 415. | 433. | 436.      | 448. | 461. |        | 478.        |    |    |    |    |
| 43390  | 445. | 470. | 478.      | 493. | 504. |        | 535.        |    |    |    |    |
| 43394  | 389. | 430. | 450.      | 463. | 486. |        | 503.        |    |    |    |    |
| 43396  | 479. | 505. | 495.      | 523. | 539. |        | 551.        |    |    |    |    |
| MEAN   | 437. | 460. | 467.      | 482. | 497. |        | 510.        |    |    |    |    |
| S.D.   | 29.8 | 26.5 | 20.9      | 25.9 | 25.5 |        | 31.5        |    |    |    |    |
| N      | 8    | 8    | 6         | 6    | 6    |        | 6           |    |    |    |    |

PROJECT NO.: WII-186012S  
SPONSOR: CMA

A 90-DAY OPAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| ANIMAL | WEEK | 7    | 8         | 9           | 10   | MALE | GROUP: 1000 MG/KG/DAY |           | 13           | 14 |
|--------|------|------|-----------|-------------|------|------|-----------------------|-----------|--------------|----|
|        |      |      |           |             |      |      | 1.2                   | 1.1       |              |    |
| 43343  | 435. | 448. | SCHEDULED | EUTH WEEK 7 | 455. | 463. | 484.                  | SCHEDULED | EUTH WEEK 12 |    |
| 43352  | 439. | 456. | SCHEDULED | EUTH WEEK 7 | 443. | 394. | 407.                  | SCHEDULED | EUTH WEEK 12 |    |
| 43353  | 422. | 442. |           |             | 378. | 387. | 547.                  |           |              |    |
| 43356  | 360. | 373. |           |             | 499. | 518. | 560.                  |           |              |    |
| 43357  | 481. | 491. |           |             | 572. | 582. | 603.                  |           |              |    |
| 43360  | 538. | 564. |           |             | 420. | 423. | 613.                  |           |              |    |
| 43374  | 409. | 409. |           |             | 522. | 532. | 441.                  |           |              |    |
| 43393  | 496. |      |           |             | 532. | 539. | 453.                  |           |              |    |
| MEAN   | 448. | 465. |           |             | 475. | 486. | 565.                  |           |              |    |
| S.D.   | 55.7 | 59.9 |           |             | 72.6 | 73.0 | 64.5                  |           |              |    |
| N      | 8    | 8    |           |             | 6    | 6    | 6                     |           |              |    |

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

PAGE 5

| WEEK   | 15   | 16        | 17           | MALE GROUP: 0 MG/KG/DAY |
|--------|------|-----------|--------------|-------------------------|
| ANIMAL |      |           |              |                         |
| 43389  | 491. | SCHEDULED | EUTH WEEK 14 |                         |
| 43390  | 546. | SCHEDULED | EUTH WEEK 14 |                         |
| 43394  | 521. | 523.      | 538.         | SCHEDULED EUTH WEEK 16  |
| 43396  | 571. | 568.      | 586.         | SCHEDULED EUTH WEEK 16  |
| MEAN   | 532. | 546.      | 562.         |                         |
| S.D.   | 34.2 | 31.8      | 33.9         |                         |
| N      | 4    | 2         | 2            |                         |

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| WEEK   | 15   | 16        | 17           | MALE GROUP: 1000 MG/KG/DAY |
|--------|------|-----------|--------------|----------------------------|
| <hr/>  |      |           |              |                            |
| ANIMAL |      |           |              |                            |
| 43357  | 561. | SCHEDULED | EUTH WEEK 14 |                            |
| 43360  | 594. | SCHEDULED | EUTH WEEK 14 |                            |
| 43374  | 455. | 451.      | 459.         | SCHEDULED EUTH WEEK 16     |
| 43393  | 570. | 560.      | 571.         | SCHEDULED EUTH WEEK 16     |
| MEAN   | 545. | 506.      | 515.         |                            |
| S.D.   | 61.6 | 77.1      | 79.2         |                            |
| N      | 4    | 2         | 2            |                            |

PAGE 6

| ANIMAL | WEEK | FEMALE GROUP: 0 MG/KG/DAY |           |             |             |             |             |
|--------|------|---------------------------|-----------|-------------|-------------|-------------|-------------|
|        |      | -1                        | 0         | 1           | 2           | 3           | 4           |
| 43408  | 147. | 164.                      | SCHEDULED | EUTH WEEK 0 |             |             |             |
| 43415  | 119. | 143.                      | SCHEDULED | EUTH WEEK 0 |             |             |             |
| 43422  | 150. | 163.                      | 184.      | SCHEDULED   | EUTH WEEK 0 |             |             |
| 43424  | 164. | 181.                      | 209.      | SCHEDULED   | EUTH WEEK 0 |             |             |
| 43434  | 162. | 183.                      | 203.      | SCHEDULED   | EUTH WEEK 1 |             |             |
| 43437  | 153. | 171.                      | 189.      | SCHEDULED   | EUTH WEEK 1 |             |             |
| 43441  | 162. | 186.                      | 216.      | 237.        | SCHEDULED   | EUTH WEEK 1 |             |
| 43448  | 151. | 165.                      | 196.      | 209.        | SCHEDULED   | EUTH WEEK 1 |             |
| 43450  | 137. | 149.                      | 167.      | 181.        | 194.        | SCHEDULED   | EUTH WEEK 2 |
| 43451  | 158. | 183.                      | 219.      | 242.        | 261.        | SCHEDULED   | EUTH WEEK 2 |
| 43452  | 158. | 164.                      | 195.      | 212.        | 238.        | SCHEDULED   | EUTH WEEK 3 |
| 43453  | 182. | 196.                      | 223.      | 240.        | 257.        | SCHEDULED   | EUTH WEEK 3 |
| 43469  | 181. | 197.                      | 227.      | 241.        | 263.        | 279.        | SCHEDULED   |
| 43470  | 141. | 160.                      | 193.      | 215.        | 228.        | 281.        | 297.        |
| 43472  | 144. | 155.                      | 177.      | 193.        | 215.        | 243.        | 256.        |
| 43473  | 148. | 163.                      | 184.      | 201.        | 209.        | 225.        | 251.        |
| 43487  | 138. | 153.                      | 181.      | 198.        | 217.        | 232.        | 246.        |
| 43498  | 170. | 189.                      | 224.      | 244.        | 259.        | 276.        | 241.        |
| 43500  | 160. | 179.                      | 202.      | 220.        | 241.        | 248.        | 246.        |
| 43514  | 155. | 174.                      | 203.      | 226.        | 245.        | 254.        | 257.        |
| MEAN   | 154. | 171.                      | 200.      | 219.        | 235.        | 250.        | 264.        |
| S.D.   | 14.9 | 15.5                      | 17.6      | 20.6        | 23.3        | 21.7        | 20.1        |
| N      | 20   | 20                        | 18        | 14          | 12          | 10          | 8           |

PROJECT NO.: WII-1886012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| WEEK          | -1   | 0    | 1                     | FEMALE GROUP: 1000 MG/KG/DAY |                       |   | 6 |
|---------------|------|------|-----------------------|------------------------------|-----------------------|---|---|
|               |      |      |                       | 2                            | 3                     | 4 |   |
| <b>ANIMAL</b> |      |      |                       |                              |                       |   |   |
| 43404         | 162. | 179. | SCHEDULED EUTH WEEK 0 |                              |                       |   |   |
| 43406         | 162. | 186. | SCHEDULED EUTH WEEK 0 |                              |                       |   |   |
| 43417         | 144. | 158. | 191.                  | SCHEDULED EUTH WEEK 0        |                       |   |   |
| 43418         | 145. | 174. | 194.                  | SCHEDULED EUTH WEEK 0        |                       |   |   |
| 43428         | 149. | 162. | 185.                  | SCHEDULED EUTH WEEK 1        |                       |   |   |
| 43445         | 147. | 165. | 195.                  | SCHEDULED EUTH WEEK 1        |                       |   |   |
| 43447         | 178. | 193. | 230.                  | 255.                         | SCHEDULED EUTH WEEK 1 |   |   |
| 43454         | 163. | 181. | 213.                  | 240.                         | SCHEDULED EUTH WEEK 1 |   |   |
| 43459         | 159. | 172. | 218.                  | 236.                         | SCHEDULED EUTH WEEK 2 |   |   |
| 43464         | 138. | 159. | 187.                  | 209.                         | SCHEDULED EUTH WEEK 2 |   |   |
| 43465         | 144. | 163. | 196.                  | 205.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43476         | 151. | 171. | 192.                  | 218.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43482         | 151. | 161. | 195.                  | 215.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43488         | 167. | 187. | 229.                  | 261.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43493         | 182. | 201. | 227.                  | 255.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43494         | 134. | 150. | 182.                  | 204.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43499         | 174. | 189. | 230.                  | 252.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43504         | 127. | 147. | 164.                  | 188.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43507         | 157. | 165. | 199.                  | 227.                         | SCHEDULED EUTH WEEK 3 |   |   |
| 43519         | 155. | 164. | 193.                  | 210.                         | SCHEDULED EUTH WEEK 3 |   |   |
| MEAN          | 154. | 171. | 201.                  | 227.                         | SCHEDULED EUTH WEEK 3 |   |   |
| S.D.          | 14.4 | 14.6 | 19.0                  | 23.2                         | SCHEDULED EUTH WEEK 3 |   |   |
| N             | 20   | 20   | 18                    | 14                           | SCHEDULED EUTH WEEK 3 |   |   |

PROJECT NO :WIL-186012S  
SPONSOR :CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| WEEK  | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | FEMALE GROUP: 0 MG/KG/DAY |
|-------|------|------|------|------|------|------|------|------|---------------------------|
|       |      |      |      |      |      |      |      |      | ANIMAL                    |
|       |      |      |      |      |      |      |      |      | SCHEDULED EUTH WEEK 7     |
|       |      |      |      |      |      |      |      |      | SCHEDULED EUTH WEEK 7     |
| 43469 | 315. | 320. | 276. | 260. | 254. | 257. | 262. | 272. |                           |
| 43470 | 263. | 251. | 251. | 258. | 257. | 261. | 271. | 276. | SCHEDULED EUTH WEEK 12    |
| 43472 | 251. | 246. | 254. | 255. | 250. | 257. | 257. | 258. | SCHEDULED EUTH WEEK 12    |
| 43473 | 251. | 323. | 327. | 322. | 327. | 327. | 344. | 255. |                           |
| 43487 | 246. | 268. | 273. | 274. | 274. | 277. | 291. | 368. | 255.                      |
| 43498 | 323. | 268. | 273. | 275. | 276. | 279. | 291. | 360. | 355.                      |
| 43500 | 268. | 276. | 275. | 275. | 276. | 286. | 291. | 289. | 293.                      |
| 43514 | 276. |      |      |      |      |      | 290. | 290. | 290.                      |
| MEAN  | 274. | 280. | 273. | 275. | 275. | 285. | 293. | 299. |                           |
| S.D.  | 29.5 | 27.9 | 25.9 | 25.9 | 27.8 | 31.7 | 39.0 | 44.1 | 41.6                      |
| N     | 8    | 8    | 6    | 6    | 6    | 6    | 6    | 4    | 4                         |

PAGE 9

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

| WEEK          | 7    | 8    | 9                     | FEMALE GROUP: 1000 MG/KG/DAY |      |      |                        | 13 | 14 |
|---------------|------|------|-----------------------|------------------------------|------|------|------------------------|----|----|
|               |      |      |                       | 10                           | 11   | 12   | 13                     |    |    |
| <b>ANIMAL</b> |      |      |                       |                              |      |      |                        |    |    |
| 43482         | 257. | 254. | SCHEDULED EUTH WEEK 7 |                              |      |      |                        |    |    |
| 43488         | 328. | 344. | SCHEDULED EUTH WEEK 7 |                              |      |      |                        |    |    |
| 43493         | 306. | 315. | 326.                  | 338.                         | 338. | 360. | SCHEDULED EUTH WEEK 12 |    |    |
| 43494         | 252. | 256. | 261.                  | 266.                         | 269. | 276. | SCHEDULED EUTH WEEK 12 |    |    |
| 43499         | 325. | 336. | 333.                  | 347.                         | 350. | 357. | 363.                   |    |    |
| 43504         | 228. | 244. | 247.                  | 252.                         | 250. | 265. | 352.                   |    |    |
| 43507         | 271. | 285. | 291.                  | 305.                         | 323. | 331. | 266.                   |    |    |
| 43519         | 257. | 274. | 274.                  | 281.                         | 283. | 289. | 326.                   |    |    |
| MEAN          | 278. | 289. | 289.                  | 298.                         | 302. | 313. | 311.                   |    |    |
| S.D.          | 37.0 | 38.7 | 34.9                  | 38.7                         | 40.5 | 41.8 | 42.9                   |    |    |
| N             | 8    | 8    | 6                     | 6                            | 6    | 6    | 4                      |    |    |

PAGE 10

PROJECT NO : WIL-186012S  
SPONSOR : CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK 15 16 17

FEMALE GROUP: 0 MG/KG/DAY

| ANIMAL | 263. | SCHEDULED EUTH WEEK 14 |
|--------|------|------------------------|
| 43487  | 355. | SCHEDULED EUTH WEEK 14 |
| 43498  | 296. | 287. 294.              |
| 43500  | 298. | 299. 295.              |
| 43514  |      | SCHEDULED EUTH WEEK 16 |
| MEAN   | 303. | 293.                   |
| S.D.   | 38.2 | 8.5                    |
| N      | 4    | 2                      |

PAGE 11

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL BODY WEIGHTS (GRAMS)

WEEK 15 16 17

FEMALE GROUP: 1000 MG/KG/DAY

| ANIMAL |      |           |              |                        |
|--------|------|-----------|--------------|------------------------|
| 43499  | 360. | SCHEDULED | EUTH WEEK 14 |                        |
| 43504  | 264. | SCHEDULED | EUTH WEEK 14 |                        |
| 43507  | 303. | 295.      | 303.         | SCHEDULED EUTH WEEK 16 |
| 43519  | 284. | 272.      | 278.         | SCHEDULED EUTH WEEK 16 |
| MEAN   | 303. | 284.      | 291.         |                        |
| S.D.   | 41.4 | 17.0      | 17.7         |                        |
| N      | 4    | 2         | 2            |                        |

PBFTSV4.2  
08/10/2001

PROJECT NO.: WIL-186012S  
SPONSOR: CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 08-08-00 TO 08-22-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME | GRADE | OBSERVATIONS                                                  |
|--------|-----|----------------|-------------|----------|------|-------|---------------------------------------------------------------|
| 43389  | M   | 0 MG/KG/DAY    | DISPOSITION | 08-08-00 | 7:53 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43390  | M   | 0 MG/KG/DAY    | DISPOSITION | 08-08-00 | 7:53 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43394  | M   | 0 MG/KG/DAY    | DISPOSITION | 08-22-00 | 8:04 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43396  | M   | 0 MG/KG/DAY    | DISPOSITION | 08-22-00 | 8:05 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43357  | M   | 1000 MG/KG/DAY | DISPOSITION | 08-08-00 | 7:53 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43360  | M   | 1000 MG/KG/DAY | DISPOSITION | 08-08-00 | 7:54 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43374  | M   | 1000 MG/KG/DAY | DISPOSITION | 08-22-00 | 8:06 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43393  | M   | 1000 MG/KG/DAY | DISPOSITION | 08-22-00 | 8:07 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43487  | F   | 0 MG/KG/DAY    | DISPOSITION | 08-08-00 | 7:54 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43498  | F   | 0 MG/KG/DAY    | DISPOSITION | 08-08-00 | 7:55 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43500  | F   | 0 MG/KG/DAY    | DISPOSITION | 08-22-00 | 8:05 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43514  | F   | 0 MG/KG/DAY    | DISPOSITION | 08-22-00 | 8:06 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.18) |
| 43499  | F   | 1000 MG/KG/DAY | DISPOSITION | 08-08-00 | 7:55 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43504  | F   | 1000 MG/KG/DAY | DISPOSITION | 08-08-00 | 7:56 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL DAY 1.04) |
| 43507  | F   | 1000 MG/KG/DAY | DISPOSITION | 08-22-00 | 8:07 | P     | EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL           |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012S  
SPONSOR : CMA

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 08-08-00 TO 08-22-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME | GRADE | OBSERVATIONS                                                                  |
|--------|-----|----------------|-------------|----------|------|-------|-------------------------------------------------------------------------------|
| 43519  | F   | 1000 MG/KG/DAY | DISPOSITION | 08-22-00 | 8:08 | P     | DAY 11.8)<br>EUTHANIZED FOR OMENTAL FAT/SERUM ANALYSIS (INTERVAL<br>DAY 11.8) |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PCRDv4.01  
08/10/2001

WIL-186012  
CMA-BFRIP

**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**APPENDIX E**

**Scoring Criteria for Functional Observational Battery**

## **Scoring Criteria for the Functional Observational Battery**

### **Definition:**

The Functional Observational Battery (FOB) is a procedure used to detect gross functional deficits in test animals.

### **Description:**

The FOB consists of a series of tests. The tests are categorized into home-cage, handling, open-field, sensory, neuromuscular, and physiological observations and are as follows:

#### **1. Home-Cage Observations**

- a. Posture
- b. Convulsions
- c. Tremors
- d. Biting
- e. Palpebral (eyelid) closure
- f. Feces Consistency

#### **2. Handling Observations**

- a. Ease of removal from cage
- b. Ease of handling animal in hand
- c. Lacrimation
- d. Chromodacryorrhea
- e. Salivation
- f. Piloerection
- g. Fur appearance
- h. Palpebral closure
- i. Respiratory rate
- j. Respiratory character
- k. Red deposits
- l. Crusty deposits
- m. Mucous membranes/eye/skin color
- n. Eye prominence
- o. Muscle tone

3. Open-Field Observations

- a. Time to first step (seconds)
- b. Rearing
- c. Mobility
- d. Backing
- e. Grooming
- f. Gait
- g. Convulsions
- h. Tremors
- i. Gait Score
- j. Arousal
- k. Bizarre/Stereotypic behavior
- l. Urination
- m. Defecation

4. Sensory Observations

- a. Approach response
- b. Touch response
- c. Startle response
- d. Tail pinch
- e. Olfactory orientation
- f. Pupil response
- g. Eyeblink response
- h. Forelimb extension
- i. Hindlimb extension
- j. Air righting reflex

5. Neuromuscular Observations

- a. Hindlimb extensor strength
- b. Grip strength-hind and forelimb
- c. Rotarod performance
- d. Hindlimb foot splay

6. Physiological Observations

- a. Catalepsy
- b. Body Temperature
- c. Body Weight

### Procedure

The FOB was performed on those study days specified in the study protocol. Test animals were removed from their cages one at a time on the designated day of testing, and, unless specified in the study protocol, were taken through the FOB in the following order: FOB1 (inclusive of categories 1a-1f and 2a), FOB2 (inclusive of categories 2b-2o, 3a-3m and 4a-4j) and FOB3 (inclusive of categories 5a-5d and 6a-6c).

Testing was performed by trained technicians, who did not know the group assignment of the animals. A description of the scoring criteria for each test is provided below:

#### 1. HOME-CAGE OBSERVATIONS

Observations of the animal in its home cage and while opening the cage were performed and scored as follows:

##### a. Posture

|                                    |   |
|------------------------------------|---|
| Sitting or standing normally       | 1 |
| Asleep, lying on side or curled up | 2 |
| Alert, oriented toward observer    | 3 |
| Sitting, head held low             | 4 |
| Flattened, limbs may be extended   | 5 |
| Lying on side, limbs in air        | 6 |
| Immobile                           | 7 |
| Rearing                            | 8 |

##### b. Convulsions

###### I. Clonic

|                                                                     |   |
|---------------------------------------------------------------------|---|
| Absent                                                              | 1 |
| Repetitive movement of mouth and jaws                               | 2 |
| Clonic tremors of the limbs<br>(contraction followed by relaxation) | 3 |
| Whole body tremors                                                  | 4 |
| Clonic convulsions                                                  | 5 |
| Wet Dog Shakes                                                      | 6 |

II. Tonic

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Absent                                                                 | 1 |
| Tonic: contraction of extensors such that limbs are rigid and extended | 2 |
| Opisthotonus: head, body and limbs rigidly arched backwards            | 3 |
| Emprosthotonus: head, body and limbs extended forward                  | 4 |
| 'Popcorn seizure': animal repeatedly jumps or bounces in air           | 5 |
| Asphyxial: bouts of severe clonic-tonic convulsions                    | 6 |

c. Tremors

|                                                                    |   |
|--------------------------------------------------------------------|---|
| None                                                               | 1 |
| Slight (1.5 mm)                                                    | 2 |
| Moderately coarse (3 mm), slight impairment of locomotion          | 3 |
| Markedly coarse (4.5 mm), moderate/marked impairment of locomotion | 4 |
| Extremely coarse (6 mm), locomotion impossible                     | 5 |

d. Biting

|                |   |
|----------------|---|
| None           | 1 |
| Biting of cage | 2 |
| Biting of self | 3 |

e. Palpebral (eyelid) closure

|                                |   |
|--------------------------------|---|
| Eyelids wide open              | 1 |
| Eyelids slightly drooping      | 2 |
| Drooping eyelids (half closed) | 3 |
| Eyelids completely shut        | 4 |

f. Feces Consistency

|                           |   |
|---------------------------|---|
| Pellets                   | 1 |
| Pellets, partially formed | 2 |
| Unformed, diarrhea        | 3 |
| Pellets absent            | 4 |

2. HANDLING OBSERVATIONS

Animals were removed singly from their cages and observed and scored as follows:

a. Ease of removal from cage

|                                                                                                        |   |
|--------------------------------------------------------------------------------------------------------|---|
| Very easy: animal sits quietly, allows investigator to pick it up                                      | 1 |
| Easy: <u>with or without vocalization</u> , without resistance or slight resistance to being picked up | 2 |
| Moderately difficult: animal rears, often following investigator's hand                                | 3 |
| Freezes: <u>with or without vocalization</u>                                                           | 4 |
| Difficult: runs around cage, is hard to grab, <u>with or without vocalization</u>                      | 5 |
| Very difficult: tail and throat rattles <u>with or without vocalization</u> , may attack hand          | 6 |

b. Ease of handling animal in hand

|                                                                                                    |   |
|----------------------------------------------------------------------------------------------------|---|
| Low: no resistance, animal is easy to handle                                                       | 1 |
| Moderately low: slight resistance to being handled, <u>with or without vocalization</u>            | 2 |
| Moderately high: rat may freeze, or be tense or rigid in hand, <u>with or without vocalization</u> | 3 |
| High: squirming, twisting, attempting to bite <u>with or without vocalization</u>                  | 4 |

c. Lacrimation

|        |   |
|--------|---|
| None   | 1 |
| Slight | 2 |
| Severe | 3 |

d. Chromodacryorrhea

|         |   |
|---------|---|
| Absent  | 1 |
| Present | 2 |

e. Salivation

|        |   |
|--------|---|
| None   | 1 |
| Slight | 2 |
| Severe | 3 |

f. Piloerection

|        |   |
|--------|---|
| None   | 1 |
| Slight | 2 |
| Severe | 3 |

g. Fur Appearance

|                           |   |
|---------------------------|---|
| Normal: clean and groomed | 1 |
| Slightly soiled           | 2 |
| Very soiled, crusty       | 3 |

h. Palpebral closure

|                                |   |
|--------------------------------|---|
| Eyelids wide open              | 1 |
| Eyelids slightly drooping      | 2 |
| Drooping eyelids (half closed) | 3 |
| Eyelids completely shut        | 4 |

i. Respiratory Rate

|                                      |   |
|--------------------------------------|---|
| Normal: by observation (80-110/min.) | 1 |
| Decreased: below 80/min.             | 2 |
| Increased: above 110/min.            | 3 |

j. Respiratory Character

|                                              |   |
|----------------------------------------------|---|
| Normal                                       | 1 |
| Rales: abnormal sound accompanying breathing | 2 |
| Retching                                     | 3 |
| Dyspneic: short of breath                    | 4 |
| Gasping                                      | 5 |

k. Red Deposits - eyes, nose, mouth

|         |   |
|---------|---|
| Present | 1 |
| Absent  | 2 |

l. Crusty Deposits - eyes, nose, mouth

|         |   |
|---------|---|
| Present | 1 |
| Absent  | 2 |

m. Mucous membranes/eye/skin color

|                        |   |
|------------------------|---|
| Pink                   | 1 |
| Pale                   | 2 |
| Darkened               | 3 |
| Darkened, brown        | 4 |
| Bright, deep red flush | 5 |

n. Eye Prominence

|              |   |
|--------------|---|
| Normal       | 1 |
| Exophthalmus | 2 |
| Enophthalmus | 3 |

o. Muscle Tone

The musculature of the limbs was palpated between the thumb and forefinger.

|                                      |   |
|--------------------------------------|---|
| Muscle is firm but not hard (normal) | 1 |
| Muscle is soft and flabby,           | 2 |
| Muscle is tense and hard             | 3 |

3. OPEN-FIELD OBSERVATIONS

Animals were placed singly in the open-field arena (24" x 24"x 6"; constructed from Plexiglas® and painted black) and evaluated over a 2-minute observation period as follows:

a. Time to first step (seconds)

The time taken for the animal to take its first step in the open-field arena was recorded in seconds.

b. Rearing

The number of times the animal reared back onto its hind legs and stood up with both front paws raised off the surface was recorded over a 2-minute observation period in the open-field arena.

c. Mobility (scored within 30 seconds of placing animal in the open-field arena)

|                                         |   |
|-----------------------------------------|---|
| Normal                                  | 1 |
| Slightly Impaired                       | 2 |
| Moderately Impaired                     | 3 |
| Totally Impaired, Locomotion impossible | 4 |

d. Backing

The number of times the animal took three or more backward steps over a 2-minute observation period in the open-field arena was recorded.

e. Grooming

The number of times the animal groomed itself over a 2-minute observation period in the open-field arena was recorded. Grooming includes washing the face and head with the forepaws, scratching the head or body with a hind paw, and biting the fur.

f. Gait

|                                                                                                    |   |
|----------------------------------------------------------------------------------------------------|---|
| Normal, head horizontal, abdomen just above surface,<br>slight up and down movement with each step | 1 |
| Walks on tiptoes                                                                                   | 2 |
| Body drags, abdomen makes contact with surface, body sway                                          | 3 |

f. Gait (Continued)

|                                                                     |   |
|---------------------------------------------------------------------|---|
| Hindlimbs <u>splayed or dragging, unable to support weight</u>      | 4 |
| Hunched body, bottom up, nose held down, arched back                | 5 |
| Ataxia, excessive sway, rocks or lurches as animal proceeds forward | 6 |

g. ConvulsionsI. Clonic

|                                                                     |   |
|---------------------------------------------------------------------|---|
| Absent                                                              | 1 |
| Repetitive movement of mouth and jaws                               | 2 |
| Clonic tremors of the limbs<br>(contraction followed by relaxation) | 3 |
| Whole body tremors                                                  | 4 |
| Clonic convulsions                                                  | 5 |
| Wet Dog Shakes                                                      | 6 |

II. Tonic

|                                                                        |   |
|------------------------------------------------------------------------|---|
| Absent                                                                 | 1 |
| Tonic: contraction of extensors such that limbs are rigid and extended | 2 |
| Opisthotonus: head, body and limbs rigidly arched backwards            | 3 |
| Emprosthotonus: head, body and limbs arched forward                    | 4 |
| 'Popcorn seizure': animal repeatedly jumps or bounces in air           | 5 |
| Asphyxial: bouts of severe clonic-tonic convulsions                    | 6 |

h. Tremors

|                                                                    |   |
|--------------------------------------------------------------------|---|
| None                                                               | 1 |
| Slight (1.5mm)                                                     | 2 |
| Moderately coarse (3 mm), slight impairment of locomotion          | 3 |
| Markedly coarse (4.5 mm), moderate/marked impairment of locomotion | 4 |
| Extremely coarse (6 mm), locomotion impossible                     | 5 |

i. Gait Score: Ability to locomote despite abnormalities in gait

|                                                |   |
|------------------------------------------------|---|
| Normal                                         | 1 |
| Slight impairment, but definite                | 2 |
| Considerable impairment, without falling       | 3 |
| Marked impairment, falls every 4 to 6 steps    | 4 |
| Severe impairment, cannot walk without falling | 5 |

j. Arousal

|                                                                             |   |
|-----------------------------------------------------------------------------|---|
| Very low: Stupor, coma, little or no responsiveness                         | 1 |
| Low: Somewhat stuporous                                                     | 2 |
| Normal: Alert, exploratory movements                                        | 3 |
| Somewhat high: Slight excitement, tense, excited sudden darting or freezing | 4 |
| Very high: Hyperalert, excited, sudden bouts of running or body movements   | 5 |

k. Bizarre/Stereotypic Behavior

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| None                                                                                                       | 1  |
| Head Flick: head shaking or backward flip of head                                                          | 2  |
| Head Search: stereotyped, repetitive turning of head from side to side as though searching the environment | 3  |
| Hallucinatory: animal appears to be responding to objects not present                                      | 4  |
| Compulsive licking or biting                                                                               | 5  |
| Prancing: restless shifting from one forelimb to other, with slight turning of the body from side to side  | 6  |
| Upright walking: on hindlimbs only                                                                         | 7  |
| Aimless wandering: progressive, slow, plodding movements about environment, with no apparent purpose       | 8  |
| Circling: tendency to move in circles around and along objects, or in an open environment                  | 9  |
| Waltzing: rapid turning in circles                                                                         | 10 |
| Retropulsion: where animal walks backwards                                                                 | 11 |
| Spatial disorientation: walking or stumbling into objects                                                  | 12 |
| Side to side rocking                                                                                       | 13 |
| Straub tail: increased tail elevation                                                                      | 14 |
| Vertical Jumping                                                                                           | 15 |
| Pacing without purpose                                                                                     | 16 |
| Head bobbing                                                                                               | 17 |

k. Bizarre/Stereotypic Behavior (continued)

Writhing: lying down, wavelike movement of abdomen,  
alternating limb movements

18

l. Urination

The number of pools of urine in the open-field arena was counted.

m. Defecation

The number of fecal boli in the open-field arena was counted.

4. SENSORY OBSERVATIONS

Sensory tests were performed in the open-field arena as follows:

a. Approach Response

The animal was approached head-on with a blunt object held approximately 3 cm from its face for a 4-second period.

|                                                  |   |
|--------------------------------------------------|---|
| No reaction                                      | 1 |
| Slow approach, sniffing or turning away          | 2 |
| More energetic than (2) may include vocalization | 3 |
| Freezes, actual muscle contraction               | 4 |
| Bizarre reaction: jumps, bites or attacks        | 5 |

b. Touch Response

The rump of the animal was approached from the side and touched with a blunt object.

|                                                                   |   |
|-------------------------------------------------------------------|---|
| No reaction                                                       | 1 |
| Animal may slowly turn, walk away                                 | 2 |
| More energetic response than (2), may include <u>vocalization</u> | 3 |
| Freezes, actual muscle contraction                                | 4 |
| Bizarre reaction: jumps, bites or attacks                         | 5 |

c. Startle Response

A clicker held approximately 5 cm above the head of the animal was used to make a sudden sound.

|                                                                   |   |
|-------------------------------------------------------------------|---|
| No reaction                                                       | 1 |
| Slight reaction, ear flick or some evidence that snap was heard   | 2 |
| More energetic response than (2), may include <u>vocalization</u> | 3 |
| Freezes, actual muscle contraction                                | 4 |
| Bizarre reactions: jumps, attacks, bites                          | 5 |

d. Tail Pinch

Metal tweezers were used to squeeze tail approximately 2-3 cm from tip.

|                                                          |   |
|----------------------------------------------------------|---|
| No reaction                                              | 1 |
| Animal may turn or walk away                             | 2 |
| More energetic than (2), may include <u>vocalization</u> | 3 |
| Freezes, actual muscle contraction                       | 4 |
| Bizarre reaction: jumps, attacks or bites                | 5 |

e. Olfactory Orientation

Approaching the animal from behind, a cotton swab that had been dipped into a jar of commercially available homogenized baby food was brought to within approximately 4-5 cm of the side of the animal's head.

|                                                                                             |   |
|---------------------------------------------------------------------------------------------|---|
| No reaction present                                                                         | 1 |
| Reaction present, animal approaches swab making sniffing movements with nose, may lick swab | 2 |

f. Pupil Response

The beam from a pen light was brought to within approximately 5 mm of the surface of the eye. Changes in pupil size were recorded.

|                        |   |
|------------------------|---|
| No pupil response      | 1 |
| Pupil response present | 2 |

g. Eyeblink Response

The corner of the eye was touched gently with a blunt object.

|                           |   |
|---------------------------|---|
| No eyeblink response      | 1 |
| Eyeblink response present | 2 |

h. Forelimb Extension

The animal was held by the tail and lowered towards a table top. The presence or absence of normal forelimb extension was recorded.

|                            |   |
|----------------------------|---|
| No forelimb extension      | 1 |
| Forelimb extension present | 2 |

i. Hindlimb Extension

The animal was placed on a table top and lifted by the tail. The presence of normal hindlimb extension was recorded.

|                            |   |
|----------------------------|---|
| No hindlimb extension      | 1 |
| Hindlimb extension present | 2 |

j. Air Righting Reflex

The animal was held in a supine position and dropped from a height of approximately 30 cm. The ease of landing was scored as follows:

|                        |   |
|------------------------|---|
| Normal                 | 1 |
| Slightly uncoordinated | 2 |
| Lands on side          | 3 |
| Lands on back          | 4 |

5. NEUROMUSCULAR OBSERVATIONS

a. Hindlimb Extensor Strength

The animal was picked up and slight pressure was applied to its hindlimbs. The normal response is for the animal to extend its hindlimbs against the pressure.

a. Hindlimb Extensor Strength (continued)

|                                                         |   |
|---------------------------------------------------------|---|
| Hindlimb resistance absent                              | 1 |
| Reduced hindlimb resistance, animal shows some weakness | 2 |
| Hindlimb resistance present                             | 3 |

b. Grip Strength - hind and forelimb

Forelimb and hindlimb grip strength were measured using a device similar to the one described by Meyer *et al* (Neurobehav. Toxicol. 1:233-239, 1979). The animal was allowed to grip a T-shaped grip bar with its forepaws and was pulled back gently along a platform until its grip was broken. As the backward locomotion continued, the animal's hindpaws reached a T-shaped rearlimb grip bar, which it was allowed to grasp and then forced to release by continued pulling. Chatillon push-pull strain gauges (J.A. King, Greensboro, North Carolina) were used to record the maximum strain required to break forelimb and hindlimb grip. The average of three valid measurements was taken as the animal's score for each grip strength measure.

c. Rotarod Performance

During the pretest period, the animals were trained to walk on a rotarod (a 7.0-cm-diameter rod rotating at 12 rpm; AccuScan Instruments, Inc., Columbus, Ohio) for a period of two minutes. The duration of time each animal remained on the rotarod (up to a maximum time of 120 seconds) during testing was recorded.

d. Hindlimb Foot Splay

The heel pads of the hindfeet of the animal were painted with a non-toxic water-based paint. Animals are dropped from a horizontal position approximately 30 cm above a table onto the Hindlimb Foot Splay Test sheet. The distance (to the nearest millimeter) between the inner edge of the ink blots made by each foot was measured. The test was repeated two more times; and the average score (to the nearest millimeter) of the latter two trials was calculated.

6. PHYSIOLOGICAL OBSERVATIONS

a. Catalepsy

The animal was placed on four Plexiglas® platforms (35 mm high and 40 mm in diameter) that were a distance of 100 mm from each other between the fore and hind feet and 60 mm between right and left feet (when measured from the center of the platforms). The time each animal remained on the four platforms was recorded. The duration of immobility was measured (up to a maximum time of 60 seconds).

b. Body Temperature

A thermometer was inserted into the rectum of the animal, and the body temperature was recorded after an equilibration period of approximately 30 seconds.

c. Body Weight

The weight of the animal was recorded.

The Functional Observational Battery is normally recorded on-line via the "IFOB" program in NT-module. In the event that the Data Management System is unavailable for on-line data collection, data are hand-recorded on the Functional Observational Battery Individual Data Sheets (T1-228, as revised). When appropriate, the hand-recorded data are later entered into the Data Management System.

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX F**

Summaries of Validation Studies  
(WIL-99032, WIL-99034, WIL-99140 and WIL-99149)

Date Range: April 12-13, 1999

Determination of Test Session Duration and Test Interval for the  
San Diego Photobeam Activation System Using Untreated Rats

Study Objective:

Regulatory guidelines require that the length of the locomotor activity monitoring session be long enough to allow untreated rats to approach normal activity levels by the last 20% of the session following their placement into a novel environment (habituation). The primary objective of this study was to determine the appropriate test session duration for the locomotor activity measuring apparatus (San Diego Instruments - Photobeam Activity System [SDI-PAS]). A secondary objective was to collect data that could be used to determine an appropriate interval length (epoch) within the test session for the capturing and reporting of locomotor activity data.

Test System:

Juvenile (approximately six-week old) Sprague-Dawley Crl:CD®(SD)IGS BR rats weighing approximately  $225 \pm 75$  grams (males) and  $135 \pm 25$  grams (females) were used on the study. The rats were arbitrarily selected from available stock.

Environmental Conditions:

The rats were acclimated to laboratory conditions for five days prior to monitoring locomotor activity. Animals were housed and maintained under conditions consistent with maintaining good health and as per WIL Standard Operating Procedures. Temperature and humidity were maintained at  $72 \pm 4^{\circ}$  F and  $50 \pm 20\%$ , respectively, in a room with a 12 hours light/12 hours dark (0600-1800 hrs) photoperiod. The facilities at WIL Research Laboratories, Inc. are fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International.

Locomotor Activity Monitoring Methods:

Locomotor activity of 24 untreated rats (12 per sex) was monitored to determine the acceptable test session duration and test interval to be used on subsequent studies. (The test interval is the frequency at which activity counts are captured.) For this testing, the duration of the test session was 120 minutes. The test interval was one minute. That is, total activity (photobeam interruptions) was recorded at one-minute intervals for 120 minutes. Monitoring commenced one minute after placement of the rats into the monitoring units.

Locomotor activity monitoring was performed using the SDI Photobeam Activity System (San Diego Instruments, Inc., San Diego, CA), which includes Photobeam Activity System (PAS) software, analyzer and 24 activity monitors. A local personal computer linked to the laboratory's mainframe computer controls the SDI PAS.

Each locomotor activity monitoring unit consists of seven photobeam emitting/detecting units attached to a mounting frame. A clear acrylic shoe box -style cage (18.5" L x 9.5" W x 8" H) fits into the mounting frame to contain a single animal during the test session. Activity is measured as interruptions of the photobeams.

Photobeam diagnostic checks were performed prior to and following completion of the test session. Confirmation that the software-driven procedure was operating correctly was obtained by manually blocking the photobeams with pre-cut pieces of cardboard.

Monitoring was performed in a sound-attenuated room equipped with a white-noise generator set to operate at approximately 70 db.

**Results:**

Mean total locomotor activity data are presented graphically as both one-minute and five-minute test intervals (epochs) for the entire 120-minute test session in Figures 1 and 2, respectively. Corresponding numerical data are presented in Tables 1 and 2.

Mean total activity counts per minute were calculated using all 24 animals at each time point. Five-minute epochal data represent grand mean activity counts for each five-minute interval.

**Discussion:**

Following their placement into the monitoring units, untreated rats returned to normal locomotor activity levels after 36 minutes. Therefore, although a 45-minute test session would be adequate to allow rats to fully habituate to a novel environment, a 60-minute test session was selected for future studies. A test session of 60 minutes duration would comfortably meet the criterion for approaching normal locomotor activity levels by the last 20% of the test session, while providing a slightly extended session that may allow for detection of delayed effects.

No differences in locomotor activity levels were apparent when the data were examined in one-minute versus five-minute test intervals (epochs). Therefore, collection and reporting of locomotor activity with the SDI-PAS using a five-minute test interval was judged to be adequate to detect alterations in locomotor activity.

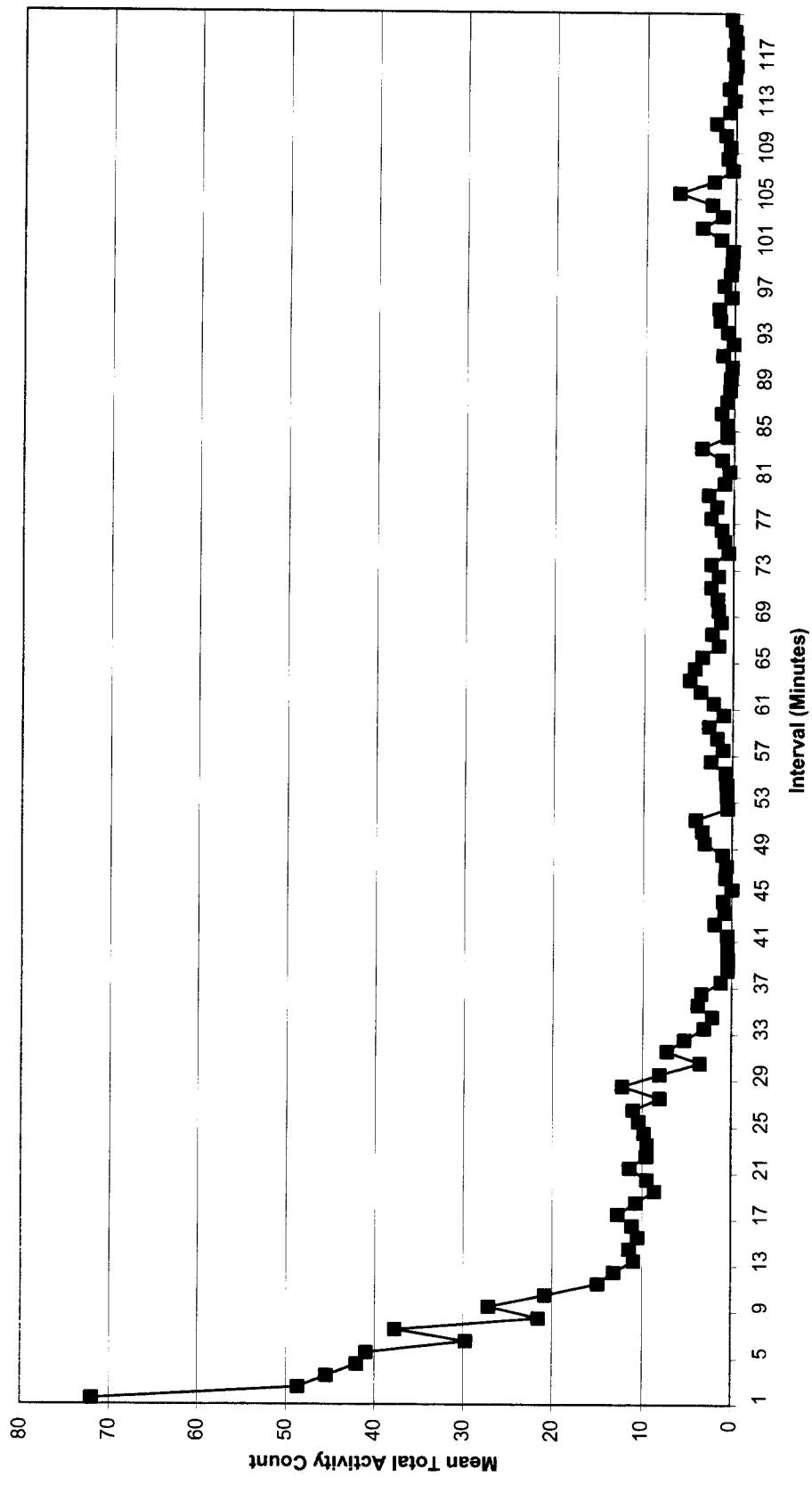
WIL-99140

Alternative locomotor activity monitoring paradigms can be employed as appropriate, necessary or requested, but the above conditions (60-minute test session with five-minute epochs) are considered to be acceptable standards for this laboratory and equipment.

WIL-99140

**Figure 1**

**Habituation Locomotor Activity in One-Minute Epochs**

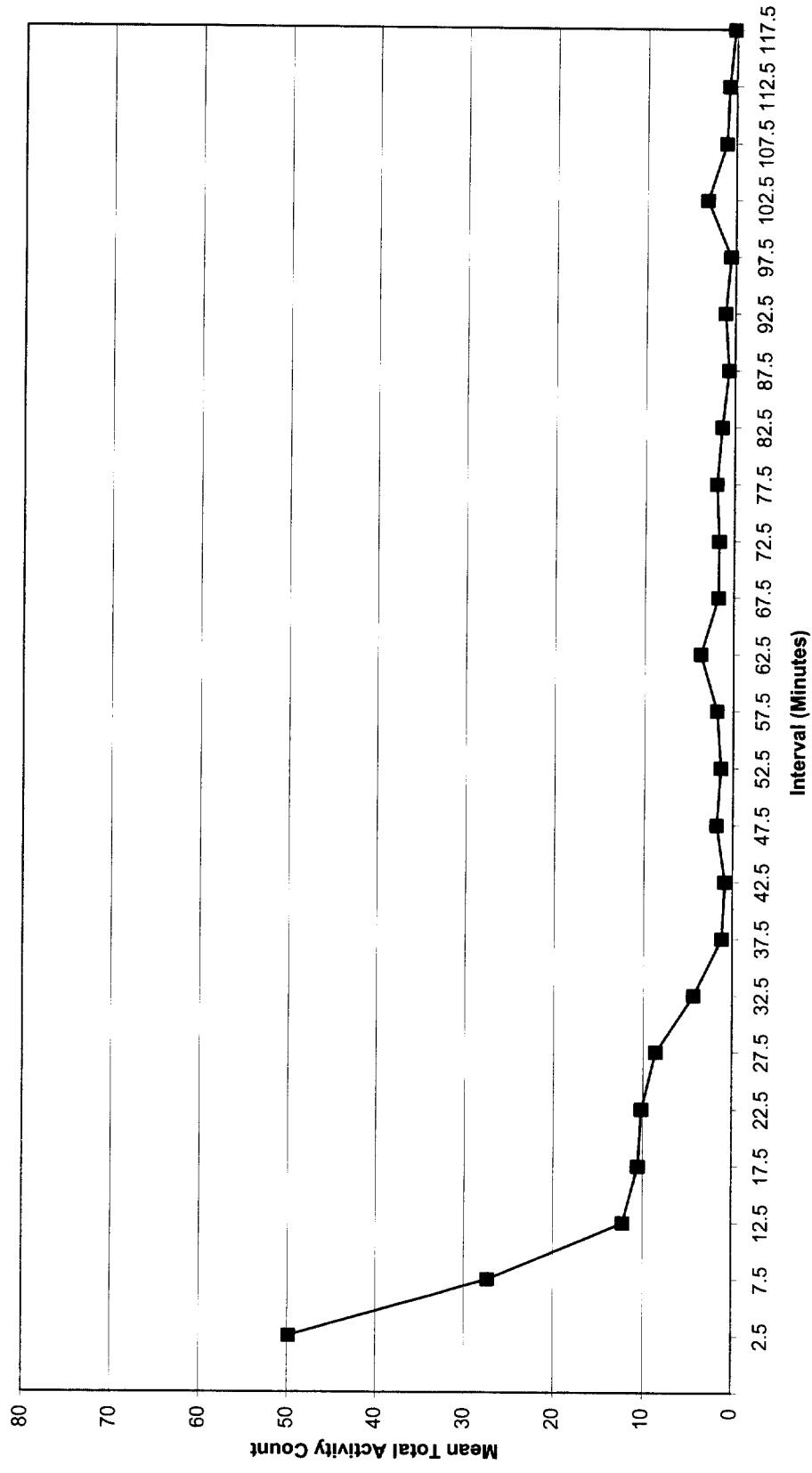


1325 of 1527

WIL-99140

**Figure 2**

Habituation Locomotor Activity in Five-Minute Epochs



1326 of 1527

**Table 1**  
**Locomotor Activity Data in 1-Minute Epochs**

| <u>Interval</u> | <u>MAC</u> | <u>Interval</u> | <u>MAC</u> | <u>Interval</u> | <u>MAC</u> | <u>Interval</u> | <u>MAC</u> |
|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| 1               | 71.95833   | 25              | 10.41667   | 49              | 3.083333   | 73              | 2.5        |
| 2               | 48.625     | 26              | 11.04167   | 50              | 3.375      | 74              | 0.541667   |
| 3               | 45.45833   | 27              | 8.041667   | 51              | 4.125      | 75              | 1          |
| 4               | 42.0833    | 28              | 12.25      | 52              | 0.5        | 76              | 1.375      |
| 5               | 40.95833   | 29              | 8.083333   | 53              | 0.583333   | 77              | 2.541667   |
| 6               | 29.70833   | 30              | 3.541667   | 54              | 0.625      | 78              | 1.875      |
| 7               | 37.70833   | 31              | 7.25       | 55              | 0.75       | 79              | 2.833333   |
| 8               | 21.58333   | 32              | 5.291667   | 56              | 2.416667   | 80              | 1.041667   |
| 9               | 27.16667   | 33              | 3.083333   | 57              | 1.083333   | 81              | 0.5        |
| 10              | 20.83333   | 34              | 2.125      | 58              | 1.708333   | 82              | 1.333333   |
| 11              | 14.95833   | 35              | 3.791667   | 59              | 2.666667   | 83              | 3.625      |
| 12              | 13.16667   | 36              | 3.416667   | 60              | 1          | 84              | 0.708333   |
| 13              | 10.91667   | 37              | 1.208333   | 61              | 2.125      | 85              | 0.791667   |
| 14              | 11.45833   | 38              | 0.416667   | 62              | 3.625      | 86              | 1.416667   |
| 15              | 10.45833   | 39              | 0.375      | 63              | 4.875      | 87              | 0.791667   |
| 16              | 11.125     | 40              | 0.458333   | 64              | 4.291667   | 88              | 0.5        |
| 17              | 12.70833   | 41              | 0.5        | 65              | 3.458333   | 89              | 0.375      |
| 18              | 10.70833   | 42              | 1.916667   | 66              | 1.583333   | 90              | 0.25       |
| 19              | 8.625      | 43              | 0.791667   | 67              | 2.333333   | 91              | 1.291667   |
| 20              | 9.458333   | 44              | 0.958333   | 68              | 1.333333   | 92              | 0.083333   |
| 21              | 11.45833   | 45              | 0          | 69              | 1.666667   | 93              | 0.75       |
| 22              | 9.541667   | 46              | 0.708333   | 70              | 1.75       | 94              | 1.625      |
| 23              | 9.458333   | 47              | 0.625      | 71              | 2.5        | 95              | 1.75       |
| 24              | 9.833333   | 48              | 1.083333   | 72              | 1.666667   | 96              | 0.375      |

1327 of 1527

**Table 2**  
**Mean Total Activity Counts in 5-Minute Epochs**

| <u>Interval</u> | <u>MAC</u> | <u>Interval</u> | <u>MAC</u> | <u>Interval</u> | <u>MAC</u> |
|-----------------|------------|-----------------|------------|-----------------|------------|
| 5               | 49.81667   | 45              | 0.833334   | 85              | 1.391667   |
| 10              | 27.4       | 50              | 1.775      | 90              | 0.666667   |
| 15              | 12.19167   | 55              | 1.316667   | 95              | 1.1        |
| 20              | 10.525     | 60              | 1.775      | 100             | 0.525      |
| 25              | 10.14167   | 65              | 3.675      | 105             | 3.133333   |
| 30              | 8.591667   | 70              | 1.733333   | 110             | 1.075      |
| 35              | 4.308333   | 75              | 1.641667   | 115             | 0.808333   |
| 40              | 1.175      | 80              | 1.933333   | 120             | 0.208333   |

Date Range: May 17-21, 1999

Demonstration of the Sensitivity of the SDI-PAS  
to Detect Alterations in Locomotor Activity in Rats

Study Objective:

Regulatory guidelines require that the testing laboratory demonstrate that the devices and systems used for measuring locomotor activity be able to detect chemically-induced increases and decreases in locomotor activity. The objective of this study was to demonstrate that the locomotor activity measuring apparatus (San Diego Instruments - Photobeam Activity System [SDI-PAS]) and the testing paradigm used by WIL Research Laboratories, Inc., met this criterion.

Test And Control Articles:

Two test articles were employed, one to elicit increases in motor activity (d-amphetamine sulfate, Research Biochemicals International, Natick, MA, Lot. No. BS-111-100) and one to elicit decreases in motor activity (chlorpromazine hydrochloride, Sigma Chemical Company, St. Louis, MO, Lot No. 48 H 1403). Physiological saline was used as the vehicle and for treatment of the concurrent negative control group.

Test System:

Juvenile (approximately six-week old) Sprague-Dawley Crl:CD<sup>®</sup>(SD)IGS BR rats weighing  $175 \pm 27$  grams (males) and  $146 \pm 20$  grams (females) at the time of randomization were used on the study. The rats were randomly assigned to treatment groups by body weight stratification in a block design, and subsequently allocated to group- and sex-uniform replicates for the locomotor activity evaluations. Dosing and locomotor activity evaluations occurred on the day after randomization (Day 0).

Environmental Conditions:

The rats were acclimated to laboratory conditions for 13 days prior to dosing. Animals were housed and maintained under conditions consistent with maintaining good health and as per WIL Standard Operating Procedures. Temperature and humidity were maintained at  $72 \pm 4^\circ$  F and  $50 \pm 20\%$ , respectively, in a room with a 12 hours light/12 hours dark (0600-1800 hrs) photoperiod. The facilities at WIL Research Laboratories, Inc. are fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International.

WIL-99149

Treatment Regimen:

Animals were assigned to treatment groups as follows:

| <u>Group Number</u> | <u>Test Article</u> | <u>Dosage Level (mg/kg)</u> | <u>Dosage Concentration (mg/ml)</u> | <u>Dosage Volume (mg/kg)</u> | <u>Number of Animals</u> |               |
|---------------------|---------------------|-----------------------------|-------------------------------------|------------------------------|--------------------------|---------------|
|                     |                     |                             |                                     |                              | <u>Male</u>              | <u>Female</u> |
| 1                   | PS                  | 0                           | 0                                   | 1.0                          | 12                       | 12            |
| 2                   | AMP                 | 2                           | 2                                   | 1.0                          | 12                       | 12            |
| 3                   | AMP                 | 4                           | 4                                   | 1.0                          | 12                       | 12            |
| 4                   | CPZ                 | 5                           | 5                                   | 1.0                          | 12                       | 12            |
| 5                   | CPZ                 | 10                          | 10                                  | 1.0                          | 12                       | 12            |

PS = Physiological Saline    AMP = d-Amphetamine Sulfate    CPZ = Chlorpromazine Hydrochloride

The test and control articles were administered as a single intraperitoneal injection (Day 0). Individual doses were calculated based on the animals' body weights recorded on the day of dose administration.

Locomotor Activity Monitoring Methods:

Locomotor activity was monitored once 4-5 days prior to dose administration (pretest) and on the day of dose administration. The duration of each test session was 60 minutes. The test interval was five minutes. Monitoring following dosing commenced 15 minutes after test or control article administration. The duration of the test session and length of the test interval were selected based on results of a previous study (WIL-99140).

Locomotor activity monitoring was performed using the SDI Photobeam Activity System (San Diego Instruments, Inc., San Diego, CA), which includes Photobeam Activity System (PAS) software, analyzer and 24 activity monitors. A local personal computer linked to the laboratory's mainframe computer controls the SDI-PAS.

Each locomotor activity monitoring unit consists of seven photobeam emitting/detecting units attached to a mounting frame. A clear acrylic shoe box -style cage (18.5" L x 9.5" W x 8" H) fits into the mounting frame to contain a single animal during the test session. Activity is measured as interruptions of the photobeams.

Photobeam diagnostic checks were performed prior to and following completion of the test session. Confirmation that the software-driven procedure was operating correctly was obtained by manually blocking the photobeams with pre-cut pieces of cardboard or other appropriate devices. After completion of the test session, motor

activity and photobeam files are transferred electronically to the mainframe computer for subsequent manipulation and presentation of the collected information, i.e., generation of tables, including statistical analysis.

Activity counts are presented as Total Activity Counts (ambulatory plus stereotypic counts) and Ambulatory Activity Counts. Sequential interruption of 2 or more photobeams, i.e., gross motor movement, is recorded as one ambulatory activity count. Repeated beam breaks of the same photobeam, i.e., fine motor movement, is recorded as one stereotypic count.

Monitoring was performed in a sound-attenuated room equipped with a white-noise generator set to operate at approximately 70 db.

Statistical Analysis:

Locomotor activity data were analyzed by analysis of variance. A one-way ANOVA followed by Dunnett's test was conducted to determine significant treatment differences from the control group at significance levels of  $p < 0.05$  and  $p < 0.01$ .

Quality Assurance:

The raw data and draft report were audited by the WIL Quality Assurance Unit to assure that the final report accurately describes the conduct and findings of the study.

Results:

Group mean locomotor activity counts are presented in Table 1. The data are presented graphically by sex, interval and activity type in Figures 1-8.

Discussion:

There were no differences in either total or ambulatory activity counts for either sex during the pretest evaluations.

Dose-dependent increases in both total and ambulatory activity counts were observed for both males and females following administration of d-amphetamine sulfate (AMP). For males, over the entire 60-minute test session, total (ambulatory) counts were increased 103 (135)% at 2 mg/kg AMP and 166 (193)% at 4 mg/kg AMP. For females, over the entire 60-minute test session, total (ambulatory) activity counts were increased 37 (46)% at 2 mg/kg AMP and 146 (184)% at 4 mg/kg AMP. With the exception of the 2 mg/kg AMP females, all differences from the vehicle control group were statistically significant ( $p < 0.01$ ).

WIL-99149

Dose-dependent decreases in both total and ambulatory activity counts were observed for both males and females following administration of chlorpromazine hydrochloride (CPZ). For males, over the entire 60-minute test session, total (ambulatory) counts were decreased 77 (85)% at 5 mg/kg CPZ and 96 (98)% at 10 mg/kg CPZ. For females, over the entire 60-minute test session, total (ambulatory) activity counts were decreased 88 (92)% at 5 mg/kg CPZ and 97 (99)% at 10 mg/kg CPZ. All differences from the vehicle control group were statistically significant ( $p < 0.01$ ).

Based on the results obtained, the SDI-PAS is sufficiently sensitive to detect dose-related increases and decreases in locomotor activity under the testing paradigm that was used.

TABLE 1  
SENSITIVITY OF THE SDI-PAS TO DETECT LOCOMOTOR ACTIVITY IN RATS  
GROUP MEAN MOTOR ACTIVITY COUNTS

| PRETEST    | GROUP: | MALE    |             |             | 5 MG/KG CPZ | 10 MG/KG CPZ |
|------------|--------|---------|-------------|-------------|-------------|--------------|
|            |        | 0 MG/KG | 2 MG/KG AMP | 4 MG/KG AMP |             |              |
| TOTAL      |        |         |             |             |             |              |
|            | MEAN   | 1019.   | 934.        | 1246.       | 1163.       | 1221.        |
|            | S.D.   | 398.2   | 447.5       | 735.0       | 377.1       | 444.6        |
|            | N      | 12      | 12          | 12          | 12          | 12           |
| AMBULATORY |        |         |             |             |             |              |
|            | MEAN   | 309.    | 281.        | 391.        | 376.        | 366.         |
|            | S.D.   | 139.5   | 177.0       | 280.9       | 154.3       | 194.8        |
|            | N      | 12      | 12          | 12          | 12          | 12           |
| DAY 0      |        |         |             |             |             |              |
|            | MEAN   | 794.    | 1609.*      | 2110.**     | 184.**      | 33.**        |
|            | S.D.   | 293.6   | 655.8       | 638.9       | 195.6       | 25.6         |
|            | N      | 12      | 12          | 12          | 12          | 12           |
| AMBULATORY |        |         |             |             |             |              |
|            | MEAN   | 234.    | 549.*       | 686.**      | 34.**       | 5.**         |
|            | S.D.   | 114.9   | 254.8       | 330.0       | 71.3        | 6.0          |
|            | N      | 12      | 12          | 12          | 12          | 12           |
| TOTAL      |        |         |             |             |             |              |
|            | MEAN   |         |             |             |             |              |
|            | S.D.   |         |             |             |             |              |
|            | N      |         |             |             |             |              |

For statistical analyses, control group 1 was compared to groups 2 and 3; control group 1 was compared to groups 4 and 5.  
\* = Significantly different from control group 1 at 0.01 using Dunnett's test

TABLE 1  
SENSITIVITY OF THE SDI-PAS TO DETECT LOCOMOTOR ACTIVITY IN RATS  
GROUP MEAN MOTOR ACTIVITY COUNTS

| GROUP:            | F E M A L E |             |             | M A L E     |              |  |
|-------------------|-------------|-------------|-------------|-------------|--------------|--|
|                   | 0 MG/KG     | 2 MG/KG AMP | 4 MG/KG AMP | 5 MG/KG CPZ | 10 MG/KG CPZ |  |
| <b>PRETEST</b>    |             |             |             |             |              |  |
| TOTAL             |             |             |             |             |              |  |
| MEAN              | 1033.       | 1190.       | 974.        | 853.        | 1347.        |  |
| S.D.              | 463.6       | 543.2       | 343.2       | 231.6       | 695.0        |  |
| N                 | 12          | 12          | 12          | 12          | 12           |  |
| <b>AMBULATORY</b> |             |             |             |             |              |  |
| MEAN              | 357.        | 399.        | 312.        | 277.        | 480.         |  |
| S.D.              | 193.8       | 204.5       | 128.3       | 105.3       | 309.4        |  |
| N                 | 12          | 12          | 12          | 12          | 12           |  |
| DAY 0             |             |             |             |             |              |  |
| TOTAL             |             |             |             |             |              |  |
| MEAN              | 1223.       | 1672.       | 3005.**     | 142.**      | 31.**        |  |
| S.D.              | 676.1       | 759.8       | 773.4       | 116.9       | 45.4         |  |
| N                 | 12          | 12          | 12          | 12          | 12           |  |
| <b>AMBULATORY</b> |             |             |             |             |              |  |
| MEAN              | 442.        | 646.        | 1255.**     | 36.**       | 4.**         |  |
| S.D.              | 251.0       | 348.5       | 451.5       | 39.5        | 5.2          |  |
| N                 | 12          | 12          | 12          | 12          | 12           |  |

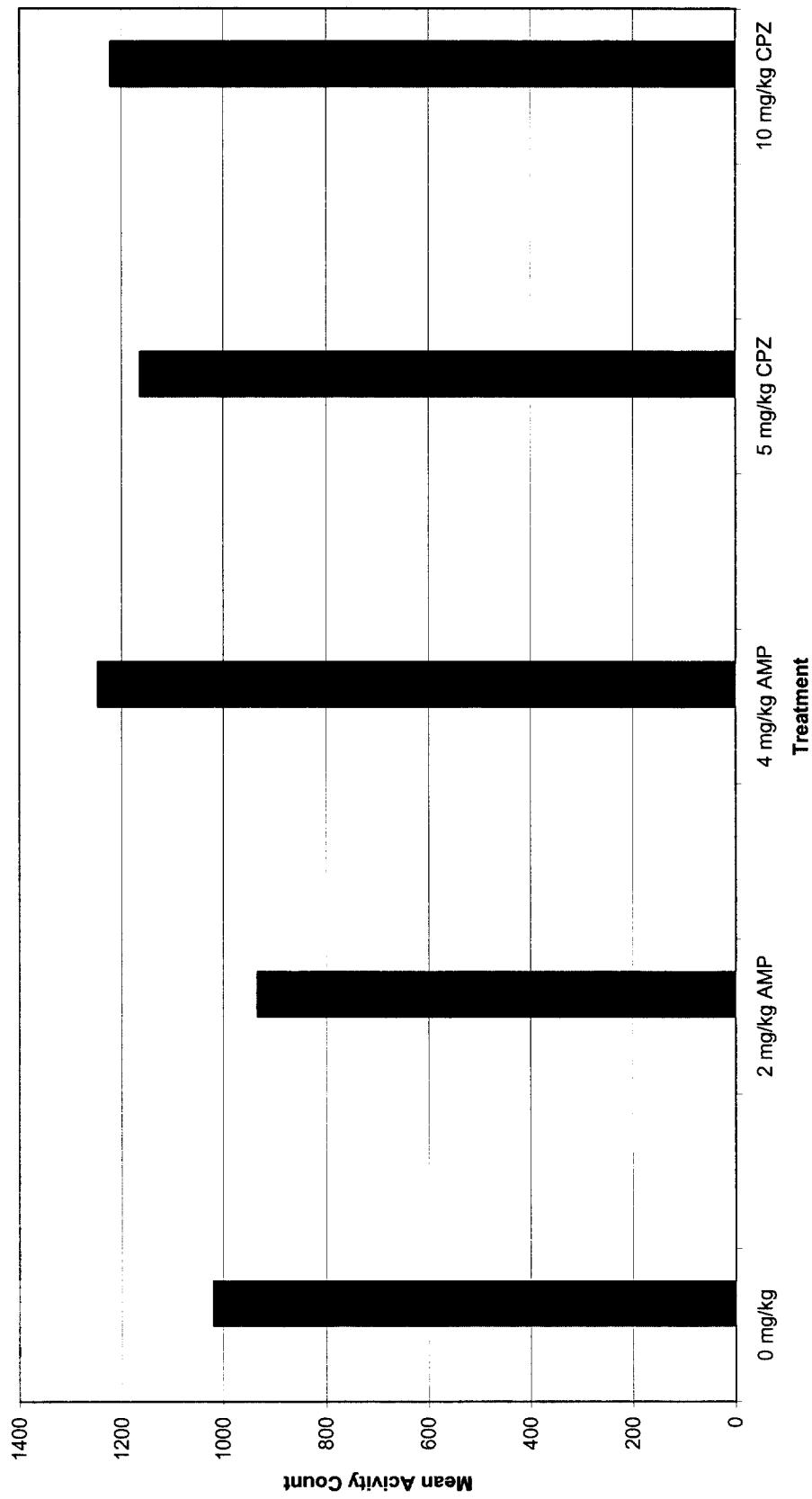
For statistical analyses, control group 1 was compared to groups 2 and 3; control group 1 was compared to groups 4 and 5.  
\* = Significantly different from control group 1 at 0.01 using Dunnett's test

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**WIL-99149**

**Figure 1**

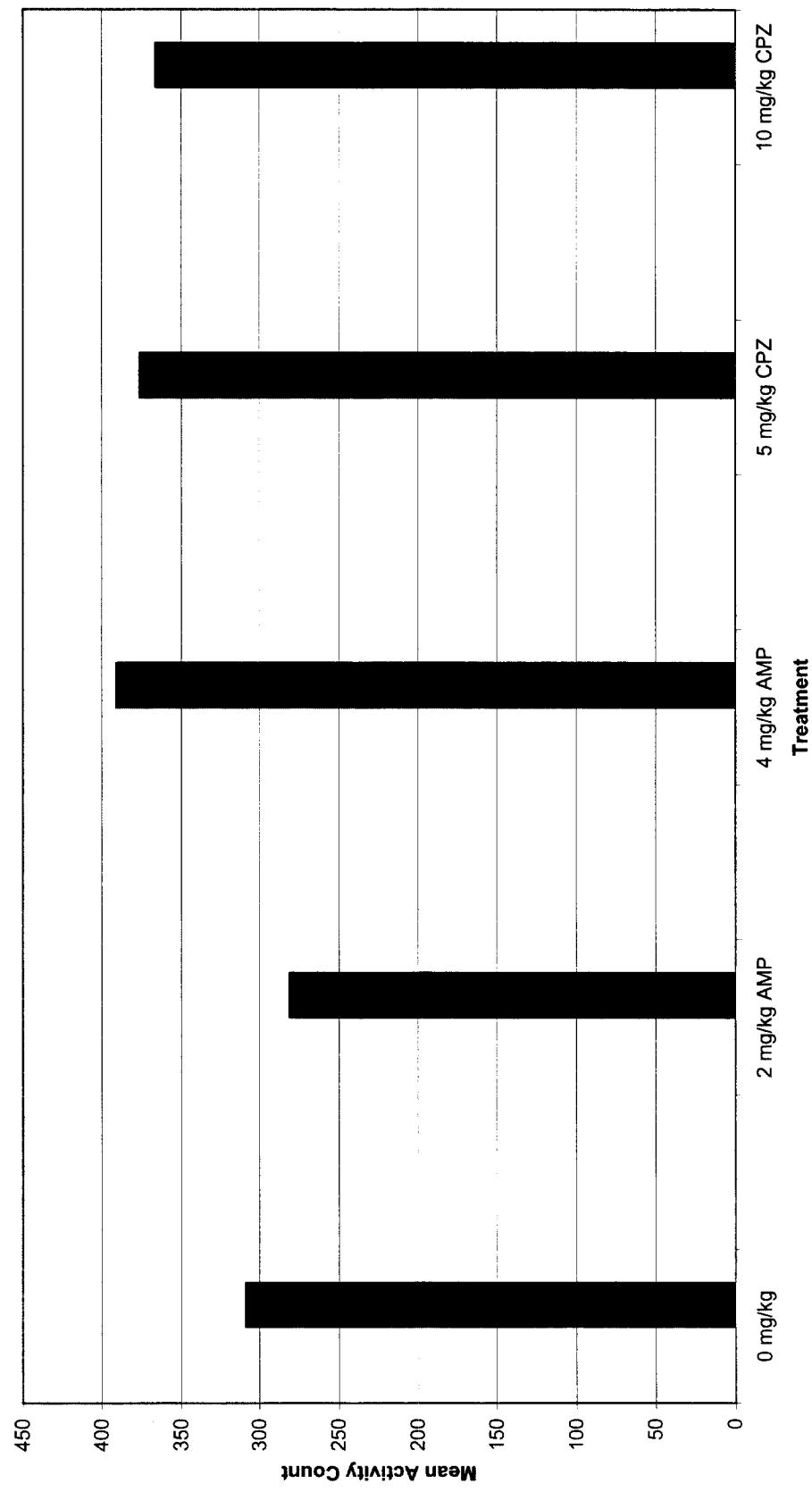
**Male Pretest Total Activity**



WIL-99149

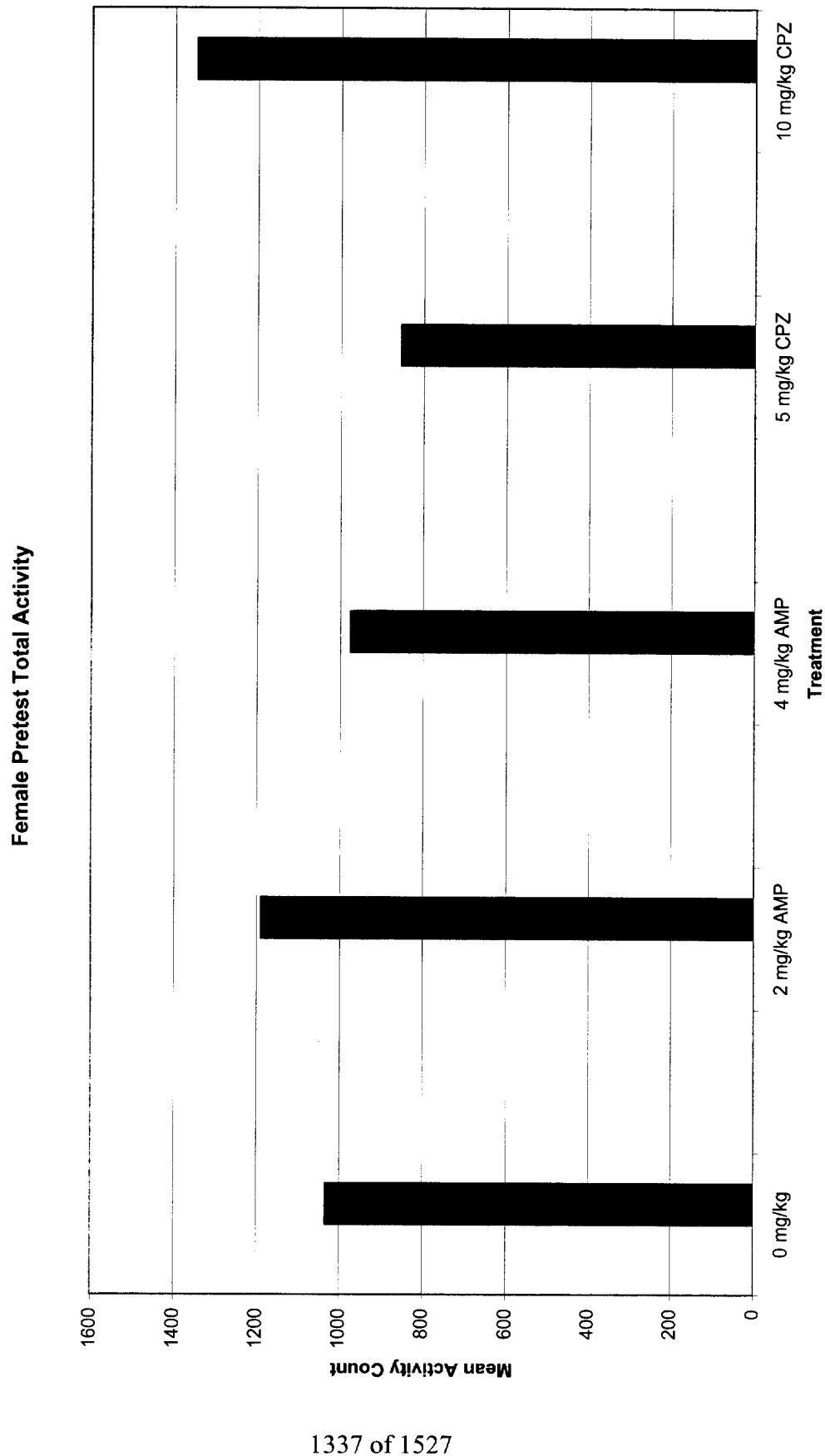
Figure 2

Male Pretest Ambulatory Activity



WIL-99149

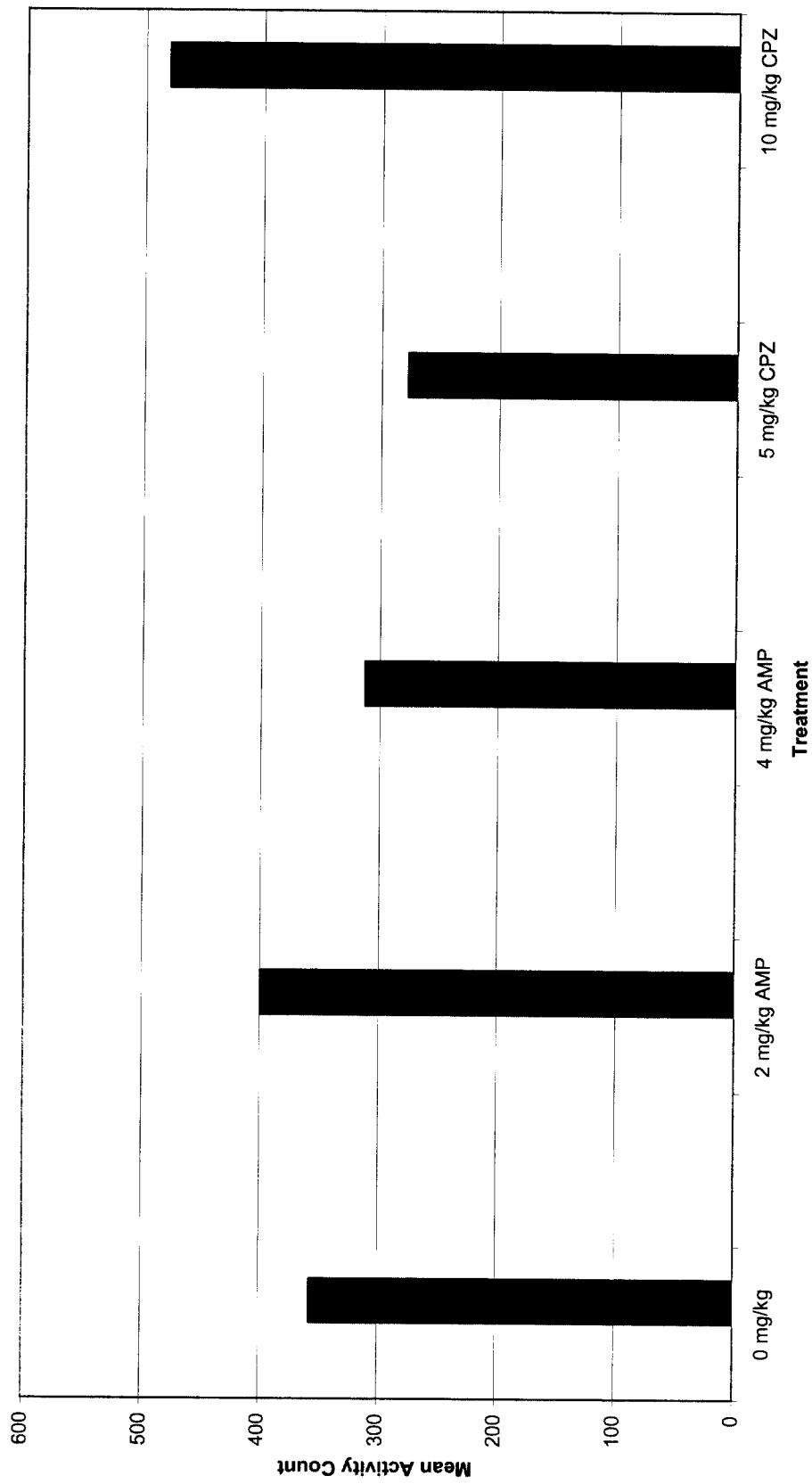
**Figure 3**



**WIL-99149**

**Figure 4**

**Female Pretreatment Ambulatory Activity**

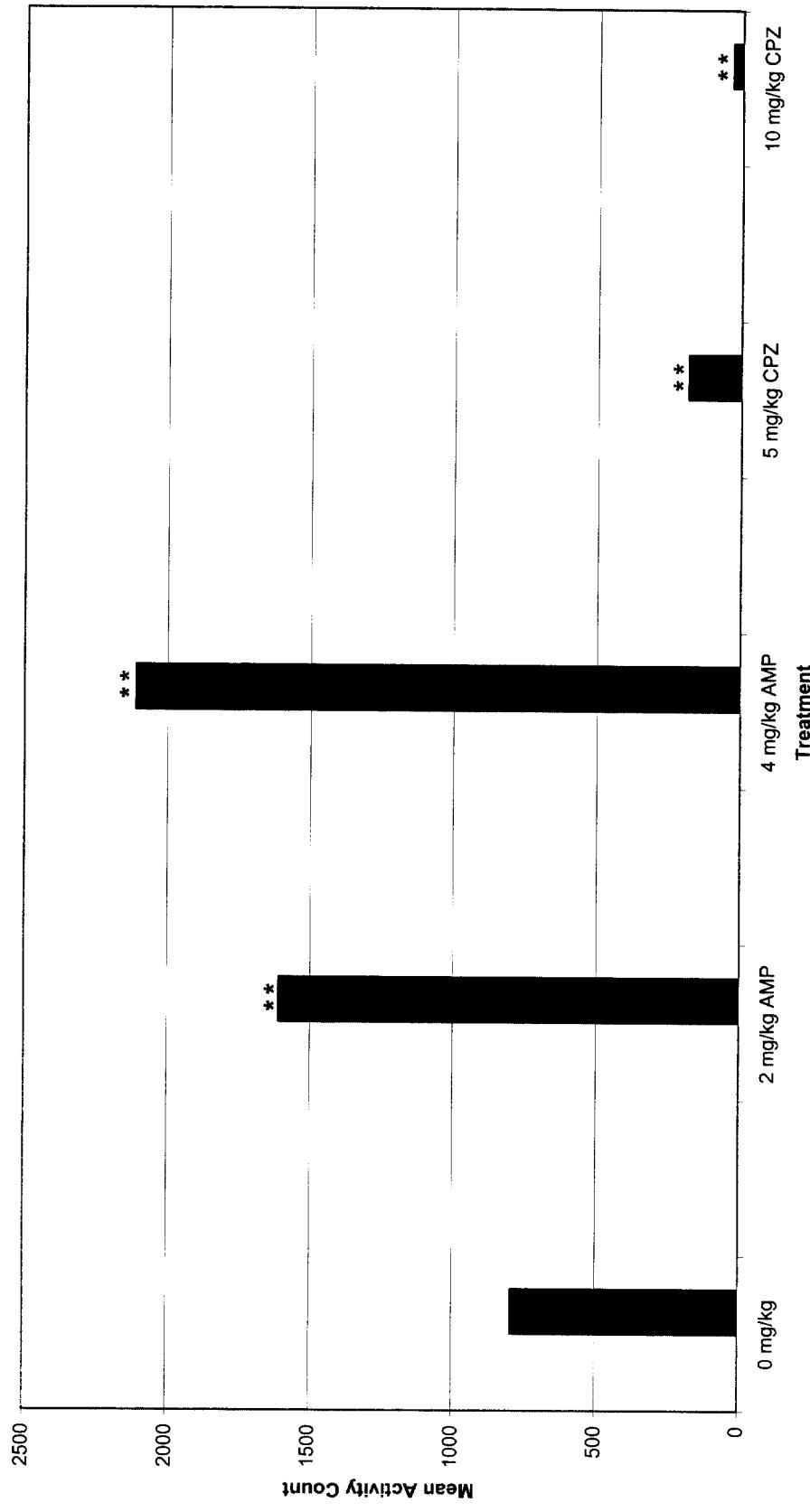


1338 of 1527

WIL-99149

Figure 5

Male Day 0 Total Activity

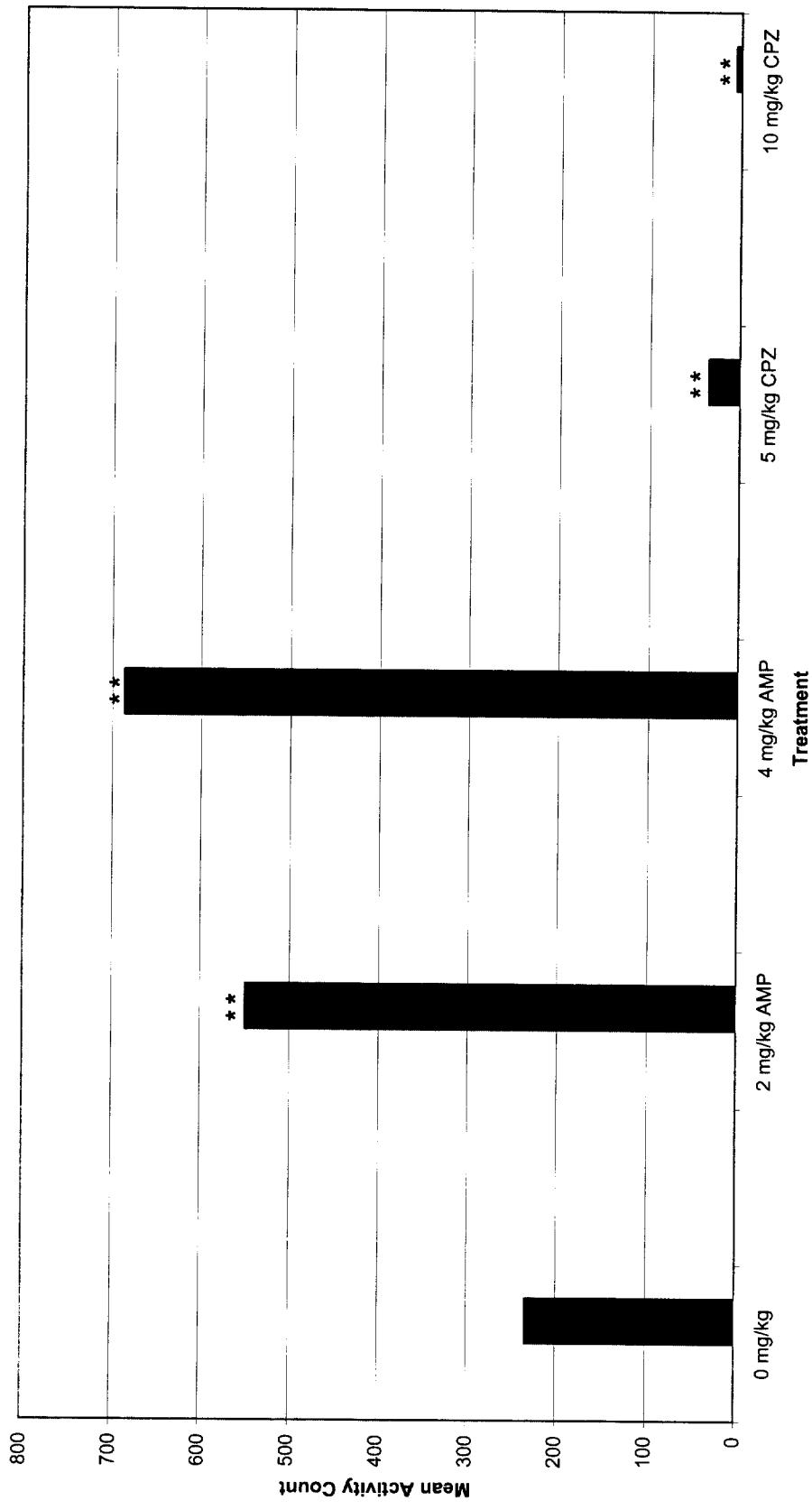


\*\* = Significantly different from control group 1 at 0.01 using Dunnett's test

WIL-99149

Figure 6

Male Day 0 Ambulatory Activity



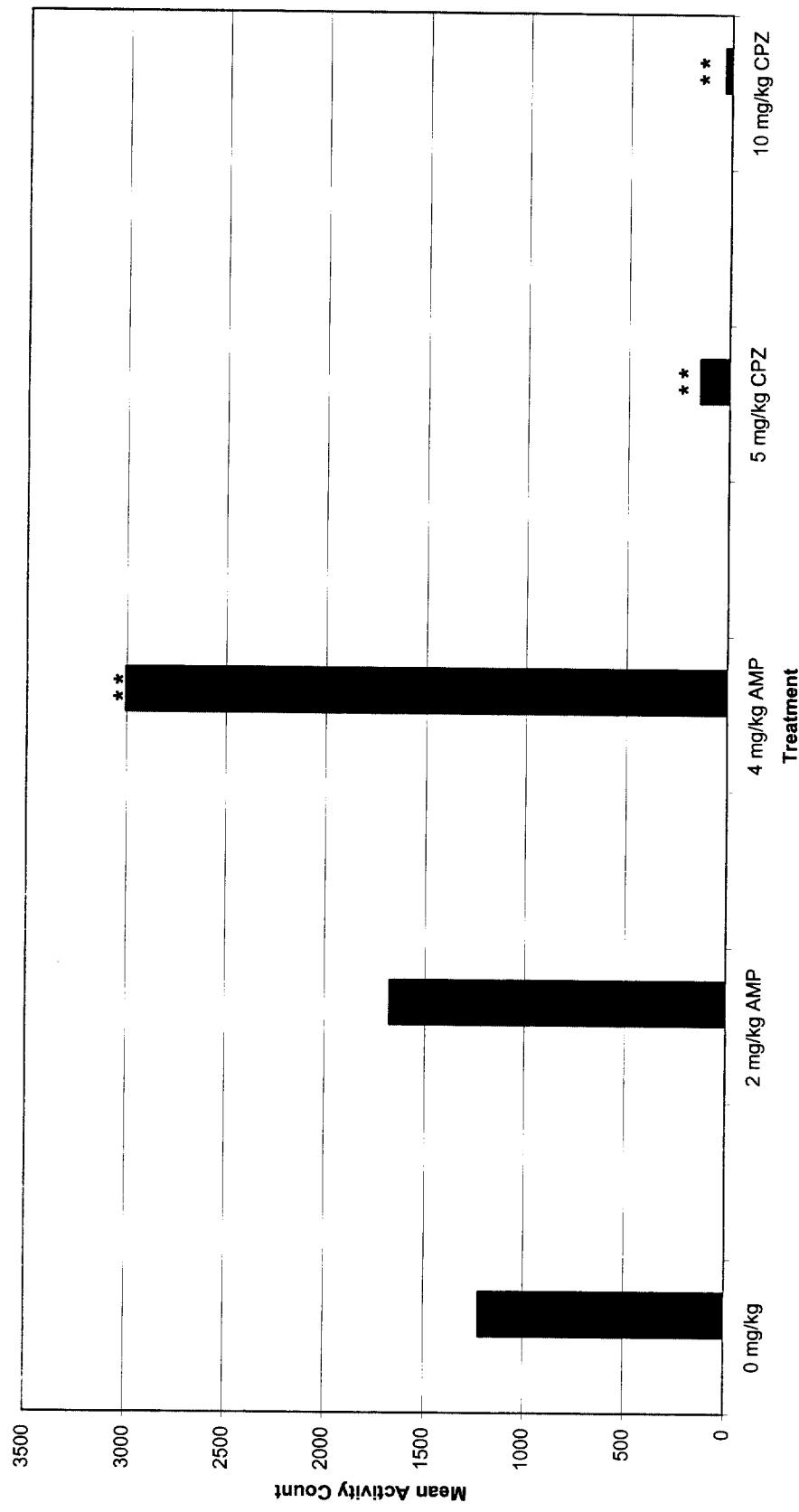
\*\* = Significantly different from control group 1 at 0.01 using Dunnett's test

Page 1

WIL-99149

Figure 7

Female Day 0 Total Activity



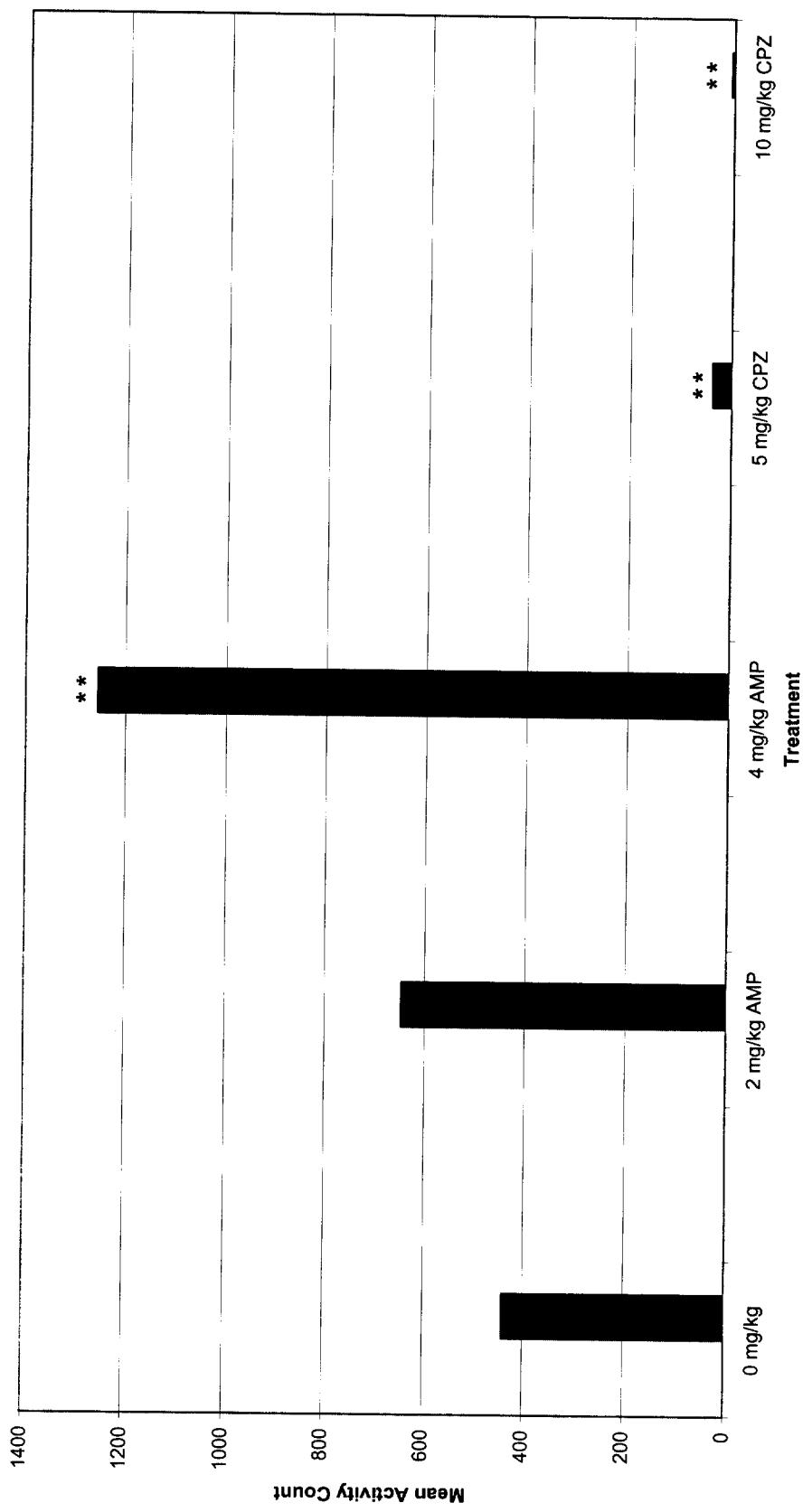
1341 of 1527

\*\* = Significantly different from control group 1 at 0.01 using Dunnett's test

WIL-99149

Figure 8

Female Day 0 Ambulatory Activity



1342 of 1527

\*\* = Significantly different from control group 1 at 0.01 using Dunnett's test

**STUDY NUMBER:** WIL-99032

Study Date Range: 03-DEC-90 Through 21-DEC-90

**STUDY TITLE:** An Acute Neurotoxicity Study of 1-Naphthyl-N-Methylcarbamate (Carbaryl) in Rats.

**STUDY OBJECTIVE:**

To provide evidence that the procedures employed in the conduct of the Functional Observational Battery(F.O.B.) and Motor Activity(M.A.) tests used in this laboratory would detect endpoints indicative of neurotoxicity.

**POSITIVE CONTROL MATERIAL:**

Carbaryl. This material is an inhibitor of acetylcholinesterase (Ruppert *et al.*, 1983; Cranmer, 1986). Acute administration results in convulsions, autonomic signs, reduced responsiveness, arousal and locomotor activity; these effects are short lived. (Ruppert *et al.*, 1983, Moser *et al.*, 1988; Takahashi, *et al.*, 1991).

**METHODS:**

Four groups of 24 rats each (12/sex) were administered 0, 2, 10 or 50 mg/kg carbaryl (98% active ingredient in 0.5% methylcellulose) as a single dose by intraperitoneal injection (Dose Volume 1 ml/kg). Dose level selection was based on the results of a range-finding study. Functional Observational Battery and Motor Activity tests were performed as described for WIL-188003, prestudy, 30 minutes (the estimated time of "peak-effect" of dose administration) and 7 days following dose administration. All animals were euthanized on study day 8 and discarded.

**RESULTS:**

The results of the study are shown in Table 1. All animals survived to study termination. During performance of the F.O.B., remarkable differences were observed between animals receiving 10 and 50 mg/kg carbaryl and the control animals. The responses occurred primarily 30 minutes after dose administration, were dose related and transient in nature (no signs of toxicity were apparent in these animals seven days after dose administration). Specific results included:

**WIL-99032**

- altered posture, palpebral closure and convulsions (tremors) during the home cage observations
- altered ease of removal (from home cage) and handling, salivation, fur appearance and eye prominence during the handling observations
- increased time to first step, alterations in mobility, gait, gait score, arousal, convulsions (tremors) and the number of rearing episodes during the open-field observations
- alterations in the approach, touch, startle, tail pinch and pupil responses, olfactory orientation and air righting reflex during the sensory observations
- alterations in hindlimb extensor strength, grip-strength and rotarod performance during the neuromuscular observations
- alterations in catalepsy time and body temperature during the physiological observations

During the motor activity test, reductions in total and ambulatory activity were observed between animals receiving 10 and 50 mg/kg carbaryl and the control animals. The reduction in activity was noted 30 minutes after dose administration, was dose related and transient in nature (activity levels were comparable to control animals seven days after dose administration).

**CONCLUSION:**

The results of this study indicate that the procedures employed during the F.O.B. and M.A. tests in this laboratory can successfully identify endpoints indicative of neurotoxicity, produced by a single dose of carbaryl.

**References**

- Ruppert, P.H., Cook, L.L., Dean, K.F. and Reiter, L.W.(1983)  
Acute Behavioral Toxicity of Carbaryl and Propoxur in Adult Rats. Pharm. Biochem. and Behav. 18 : 579-584.
- Cranmer, M.F. (1986) Carbaryl, A Toxicological Review and Risk Analysis. Neurotoxicology. 7 (1): 247-332.
- Moser, V.C., McCormick, J.P., Creason, J.P., and MacPhail, R.C. (1988). Comparison of Chlordimeform and Carbaryl using a Functional Observational Battery. Fund. Appl. Toxicol. 11, 189-206.
- Takahashi, R.N., Poli, A., Morato, G.S., Lima, T.C.M. and Zanin, M. (1991). Effects of Age on Behavioral and Physiological Responses to Carbaryl in Rats. Neurotox. Teratol. 13; 21-26.

**Table 1**

Effects of Carbaryl on Determinants of the F.O.B. and  
Motor Activity: Dosed Rats compared to Control Animals\*

| <b>OBSERVATION</b>                    | Prestudy |        | TIME            |        |             |        |
|---------------------------------------|----------|--------|-----------------|--------|-------------|--------|
|                                       | Male     | Female | 30 minutes p.d. |        | 7 days p.d. |        |
|                                       | Male     | Female | Male            | Female | Male        | Female |
| <b><u>HOME CAGE OBSERVATIONS</u></b>  |          |        |                 |        |             |        |
| Posture                               | -        | -      | H               | H      | -           | -      |
| Convulsions-Clonic                    | -        | -      | M,H             | M,H    | -           | -      |
| Convulsions-Tonic                     | -        | -      | -               | -      | -           | -      |
| Tremors                               | -        | -      | M,H             | M,H    | -           | -      |
| Biting                                | -        | -      | -               | -      | -           | -      |
| Palpebral Closure                     | -        | -      | -               | H      | -           | -      |
| Feces Consistency                     | -        | -      | -               | -      | -           | -      |
| <b><u>HANDLING OBSERVATIONS</u></b>   |          |        |                 |        |             |        |
| Ease of Removal from Cage             | -        | -      | H               | -      | L,M         | -      |
| Ease of Handling                      | -        | -      | H               | H      | -           | -      |
| Lacration                             | -        | -      | -               | -      | -           | -      |
| Chromodacryorrhea                     | -        | -      | -               | -      | -           | -      |
| Salivation                            | -        | -      | H               | H      | -           | -      |
| Piloerection                          | -        | -      | -               | -      | -           | -      |
| Fur Appearance                        | -        | -      | H               | -      | -           | -      |
| Palpebral Closure                     | -        | -      | -               | -      | -           | -      |
| Respiratory Rate                      | -        | -      | -               | -      | -           | -      |
| Respiratory Character                 | -        | -      | -               | -      | -           | -      |
| Red Deposits-Eyes                     | -        | -      | -               | -      | -           | -      |
| Red Deposits-Nose                     | -        | -      | -               | -      | -           | -      |
| Red Deposits-Mouth                    | -        | -      | -               | -      | -           | -      |
| Crusty Deposits-Eyes                  | -        | -      | -               | -      | -           | -      |
| Crusty Deposits-Nose                  | -        | -      | -               | -      | -           | -      |
| Crusty Deposits-Mouth                 | -        | -      | -               | -      | -           | -      |
| Mucous Membranes-Color                | -        | -      | -               | -      | -           | -      |
| Eyes-Color                            | -        | -      | -               | -      | -           | -      |
| Skin-Color                            | -        | -      | -               | -      | -           | -      |
| Eye Prominence                        | -        | -      | -               | M      | -           | -      |
| Muscle Tone                           | -        | -      | -               | -      | -           | -      |
| <b><u>OPEN-FIELD OBSERVATIONS</u></b> |          |        |                 |        |             |        |
| Time to First Step                    | -        | -      | H               | -      | -           | -      |
| Mobility                              | -        | -      | H               | H      | -           | -      |
| Gait                                  | -        | -      | H               | H      | -           | -      |

**WIL-99032**

|                     |   |   |   |     |   |   |
|---------------------|---|---|---|-----|---|---|
| Convulsions-Clonic  | - | - | H | M,H | - | - |
| Convulsions-Tonic   | - | - | - | -   | - | - |
| Tremors             | - | - | H | M,H | - | - |
| Gait Score          | - | - | H | H   | - | - |
| Arousal             | - | - | H | H   | - | - |
| Bizarre/Stereotypic |   |   |   |     |   |   |
| Behavior            | - | - | - | -   | - | - |
| Rearing             | - | - | H | H   | - | - |
| Backing             | - | - | - | -   | - | - |
| Grooming            | - | - | - | -   | - | - |
| Defecation          | - | - | - | -   | - | - |
| Urination           | - | - | - | -   | - | - |

**SENSORY OBSERVATIONS**

|                       |   |   |     |   |   |   |
|-----------------------|---|---|-----|---|---|---|
| Approach Response     | - | - | -   | H | - | M |
| Touch Response        | - | - | M   | H | - | - |
| Startle Response      | - | - | H   | - | - | - |
| Tail Pinch Response   | - | - | H   | H | - | - |
| Olfactory Orientation | - | - | H   | - | - | - |
| Eyeblink Response     | - | - | -   | - | - | - |
| Pupil Response        | - | - | M,H | H | - | - |
| Forelimb Extension    | - | - | -   | - | - | - |
| Hindlimb Extension    | - | - | -   | - | - | - |
| Air Righting Reflex   | - | - | M,H | H | - | - |

**NEUROMUSCULAR OBSERVATIONS**

|                            |   |   |     |   |   |   |
|----------------------------|---|---|-----|---|---|---|
| Hindlimb Extensor Strength | - | - | H   | H | - | - |
| Grip Strength-Forelimb     | - | - | -   | H | - | L |
| -Hindlimb                  | - | - | H   | H | - | - |
| Rotarod Performance        | - | - | M,H | H | - | H |
| Hindlimb Footplay          | - | - | -   | - | - | - |

**PHYSIOLOGICAL OBSERVATIONS**

|                  |   |   |     |     |   |   |
|------------------|---|---|-----|-----|---|---|
| Catalepsy        | - | - | H   | H   | - | - |
| Body Temperature | - | - | M,H | M,H | - | - |
| Body Weight      | - | - | -   | -   | - | - |

**MOTOR ACTIVITY**

|  |   |   |     |   |   |   |
|--|---|---|-----|---|---|---|
|  | - | - | M,H | H | - | - |
|--|---|---|-----|---|---|---|

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\*Differences between treated groups and control group, significant ( $P < 0.05$ )  
H = high dose, M = mid-dose, L = low dose

p.d.: Post Dose

**STUDY NUMBER:** WIL-99034

Study Date Range: 14-JAN-91 Through 15-FEB-91

**STUDY TITLE:** **PART 1:** A Repeated Dose Neurotoxicity Study of Acrylamide in Rats.

**PART 2:** An Acute Neurotoxicity Study of Trimethyltin Chloride in Rats.

**STUDY OBJECTIVES:**

The overall objective of these studies was to provide evidence that the procedures employed in the conduct of the Neurotoxicity Screening Battery used in this laboratory would detect endpoints indicative of neurotoxicity. The specific objectives of each study are provided below.

**PART 1:** To validate the procedures used in the Functional Observational Battery (F.O.B.) to detect limb weakness (i.e., neuromuscular deficits). Specifically, this included the hindlimb extensor strength (Cabe and Tilson, 1978), fore- and hindlimb grip strength (Meyer *et al*, 1978), rotarod (Kaplan and Murphy, 1972) and hindlimb foot-splay (Edwards and Parker, 1977) tests. The study also served to provide positive control groups exhibiting peripheral nervous system pathology with which to validate the pathology procedures utilized in this laboratory.

**PART 2:** To provide positive control groups exhibiting central nervous system pathology with which to validate the pathology procedures utilized in this laboratory.

**POSITIVE CONTROL MATERIALS:**

**PART 1:** Acrylamide. Repeated administration of this material results in alterations in posture, ease of handling, respiratory character, fur appearance, palpebral closure, gait, mobility, air righting reflex, hindlimb extensor strength, fore- and hindlimb grip strength, rotarod performance, hindlimb foot-splay and bodyweight (Kaplan and Murphy, 1972; Edwards and Parker, 1977; Cabe and Tilson, 1978; Tilson *et al*, 1979; Pryor *et al*, 1983; Sterman and Sheppard, 1983; Brouxup *et al*, 1989; Schulze and Boysen, 1991; Moser *et al*, 1992; Shell *et al*, 1992). This material also produces a central-peripheral distal axonopathy; the peripheral nervous system is primarily affected and the damage is characterized by primary degeneration of the axon. This can be associated with changes in the neuronal perikarya (Tilson *et al*, 1979; Miller and Spencer, 1985; Brouxup *et al*, 1989; Schulze and Boysen, 1991; Moser *et al*, 1992).

**PART 2:** Trimethyltin Chloride. Acute administration of this material produces central nervous system pathology characterized by damage to the hippocampal formation (Chang, 1986; O'Shaughnessy and Losos, 1986; Woodruff and Baisden, 1990).

**METHODS:**

**PART 1:** Four groups of 24 rats each (12/sex) were administered 0, 5, 10 and 20 mg/kg/day acrylamide (99 % active ingredient in deionized water), 5 days/week for four consecutive weeks. The dose volume for all groups was 5 ml/kg. Dose levels were selected from values in the literature (Tilson *et al.*, 1979; Spencer and Schaumberg, 1980). Functional Observational Battery Tests were performed prestudy, 1 and 6 hours, 1, 7, 14, 21 and 28 days after receipt of the first dose of the test material (all F.O.B. tests were performed prior to dose administration with the exception of the 1 and 6 hour tests). Motor activity tests were performed prestudy and 28 days after receipt of the first dose. Functional Observational Battery (F.O.B.) and Motor Activity (M.A.) tests were performed as described for WIL-188003. At the end of the study all animals (24/group) were euthanized and perfused *in situ*. Each rat received approximately 0.1 ml heparin solution (1000 USP units/ml)/100g body weight, by intravenous injection (tail vein). After a minimum period of 10 minutes each animal was anesthetized by carbon dioxide inhalation and the thoracic cavity opened by a mid-line incision. A 16 or 18 gauge cannula was then inserted into the left ventricle via a small incision and clamped with a hemostat. The right atrium was then incised to provide an outlet for blood and perfusion solutions. Each animal was initially perfused with a buffered sodium nitrite solution to displace the blood and dilate the blood vessels. This was followed by the fixative, buffered 1.5% glutaraldehyde-4% formaldehyde solution. Following perfusion fixation of the animal, the hindlimbs, forelimbs, tail, brain (excised from skull), head and vertebral column were dissected and placed in buffered 1.5% glutaraldehyde-4% formaldehyde for a minimum of 24 hours before further dissection. The following central and peripheral nervous system tissues were dissected for 12 animals (6/sex) in the control and high dose group (20 mg/kg/day):

- Brain - forebrain, center of the cerebrum, midbrain, cerebellum and pons, and the medulla oblongata.
- Spinal cord - at cervical swellings C<sub>3</sub>-C<sub>8</sub> and at lumbar swellings T<sub>13</sub>-L<sub>4</sub>.
- Gasserian ganglion/Trigeminal nerves.
- Lumbar dorsal root ganglion at T<sub>13</sub>-L<sub>4</sub>.
- Lumbar dorsal root fibers at T<sub>13</sub>-L<sub>4</sub>.
- Lumbar ventral root fibers at T<sub>13</sub>-L<sub>4</sub>.
- Cervical dorsal root ganglion at C<sub>3</sub>-C<sub>8</sub>.
- Cervical dorsal root fibers at C<sub>3</sub>-C<sub>8</sub>.
- Cervical ventral root fibers at C<sub>3</sub>-C<sub>8</sub>.
- Sciatic nerve (mid-thigh region)
- Sciatic nerve (at sciatic notch)
- Sural nerve
- Tibial nerve

**WIL-99034**

- Peroneal nerve
- Optic nerve
- Eyes

Following dissection, central and peripheral nervous system tissues were embedded in paraffin wax, sectioned, mounted on slides and stained with hematoxylin and eosin. Tissues were then examined microscopically for lesions.

**PART 2:** One group of 10 rats (5/sex) were administered 7.5 mg/kg Trimethyltin Chloride (dissolved in physiological saline; dose volume: 5 ml/kg) as a single dose by intraperitoneal injection. Dose level selection was based on values from the literature (O'Shaughnessy and Losos, 1986). All animals (5/sex) were euthanized and tissues processed for neuropathological examination as described above in PART 1, 15 days after receipt of the dose.

**RESULTS:**

**PART 1:**

A. Functional Observational Battery

The results of the study are shown in Table 1. All animals survived to study termination.

- No remarkable differences were observed between animals receiving 5, 10 and 20 mg/kg/day acrylamide and the control animals, during conduct of the F.O.B. 1 and 6 hours and 1 and 7 days after administration of the first dose.
- Differences were observed between animals receiving 10 and 20 mg/kg/day acrylamide and control animals during the conduct of the F.O.B. 14, 21 and 28 days after administration of the first dose, were dose related and more apparent with cumulative exposure (i.e., time.) Specific results included:
  - alterations in muscle tone during the handling observations
  - alterations in the startle and tail pinch responses and air righting reflex during the sensory observations
  - alterations in hindlimb extensor strength, fore- and hindlimb grip strength and rotarod performance (reductions) and hindlimb foot-splay (increased).
  - alterations (decreases) in body temperature and bodyweight.

B. Motor Activity

No remarkable differences were observed between animals receiving 5, 10 and 20 mg/kg/day acrylamide and control animals in total or ambulatory activity counts (across

or within activity sessions) prestudy or 28 days after receipt of the first dose.

C. Neuropathology

- No pathological changes were observed in the brain, spinal cord (cervical or lumbar region), gasserian ganglion, lumbar root (males only), lumbar dorsal ganglion, cervical root, cervical dorsal ganglion, cervical ventral root fibers (males only) optic nerves or eyes for animals of either sex in the control and high dose group (20 mg/kg/day).
- Biologically and/or significantly increased numbers of animals of both sexes from group 4 (20 mg/kg/day) exhibited lesions indicative of neurotoxicity (axonal degeneration, digestion chambers, swollen axon cylinders or demyelination) in the trigeminal nerve, lumbar dorsal and ventral root fibers, cervical dorsal root fibers, sciatic nerve (significantly elevated in the male,  $P < 0.05$ ) sural nerve, tibial nerve (significantly elevated in the male,  $P < 0.05$ ) peroneal nerve, lumbar root (females only) and cervical ventral root fibers (females only) when compared to the control group animals.

**PART 2:**

Neuropathology

- 2/5 (40%) male rats exhibited neuronal loss in the dentate gyrus. 1/5 (20%) male rats exhibited chromatolysis in the gasserian ganglion neurons.

**CONCLUSIONS:**

The results of this study indicate that the procedures employed during the conduct of the Neurotoxicity Screening Battery used in this laboratory can detect the primary neurotoxic effects produced by acrylamide and trimethyltin chloride.

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**Table 1**  
**Effects of Acrylamide on Determinants of the F.O.B. and  
 Motor Activity: Dosed Rats Compared to Control Animals.\***

| OBSERVATIONS                  | Prestudy |        | 1h p.d. |        | 6h p.d. |        | 1d p.d. |        | 7d p.d. |        | 14d p.d. |        | 21d p.d. |        | 28d p.d. |        |   |
|-------------------------------|----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|---|
|                               | Male     | Female | Male    | Female | Male    | Female | Male    | Female | Male    | Female | Male     | Female | Male     | Female | Male     | Female |   |
| <b>HOME CAGE OBSERVATIONS</b> |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |   |
| Posture                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | M |
| Convulsions-Clonic            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Convulsions-Tonic             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Tremors                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Biting                        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Palpebral Closure             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Feces Consistency             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| <b>HANDLING OBSERVATIONS</b>  |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |   |
| Ease of Removal               | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | L |
| Ease of Handling              | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | M |
| Lacrimation                   | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Chromodacryorrhea             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Salivation                    | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Piloerection                  | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Fur Appearance                | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Palpebral Closure             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Respiratory Rate              | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Respiratory Character         | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Red Deposits-Eyes             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Red Deposits-Nose             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Red Deposits-Mouth            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Crusty Deposits-Eyes          | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Crusty Deposits-Nose          | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Crusty Deposits-Mouth         | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Mucous Membranes-Color        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Eyes-Color                    | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Skin-Color                    | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Eye Prominence                | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | - |
| Muscle Tone                   | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      | H |

Table 1 (continued)

| <b>OBSERVATIONS</b>            | Prestudy |        | 1h p.d. |        | 6h p.d. |        | 1d p.d. |        | 7d p.d. |        | 14d p.d. |        | 21d p.d. |        | 28d p.d. |        |
|--------------------------------|----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|
|                                | Male     | Female | Male    | Female | Male    | Female | Male    | Female | Male    | Female | Male     | Female | Male     | Female | Male     | Female |
| <b>OPEN-FIELD OBSERVATIONS</b> |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |
| Time to First Step             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Mobility                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |
| Gait                           | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |
| Convulsions-Clonic             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Convulsions-Tonic              | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Tremors                        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Gait Score                     | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Arousal                        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Bizarre/Stereotypic            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Behavior                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Rearing                        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Backing                        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Grooming                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Urination                      | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Defecation                     | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| <b>SENSORY OBSERVATIONS</b>    |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |
| Approach Response              | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Touch Response                 | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Startle Response               | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |
| Tail Pinch Response            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Olfactory Orientation          | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Eyeblink Response              | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Pupil Response                 | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Forelimb Extension             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Hindlimb Extension             | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Air Righting Reflex            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |

Table 1 (continued)

| OBSERVATIONS                      | Prestudy |        | 1h p.d. |        | 6h p.d. |        | 1d p.d. |        | 7d p.d. |        | 14d p.d. |        | 21d p.d. |        | 28d p.d. |        |
|-----------------------------------|----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|
|                                   | Male     | Female | Male    | Female | Male    | Female | Male    | Female | Male    | Female | Male     | Female | Male     | Female | Male     | Female |
| <b>NEUROMUSCULAR OBSERVATIONS</b> |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |
| Hindlimb Extensor Strength        | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | H        | H      | M,H      | H      |
| Grip Strength-Forelimb            | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| -Hindlimb                         | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | H        | -      | H        | -      |
| Rotarod Performance               | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | H        | -      | H        | -      |
| Hindlimb Footslip                 | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |
| <b>PHYSIOLOGICAL OBSERVATIONS</b> |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |
| Catalepsy                         | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | -        | -      |
| Body Temperature                  | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | -        | -      | H        | H      |
| Body Weight                       | -        | -      | -       | -      | -       | -      | -       | -      | -       | -      | -        | -      | H        | H      | H        | H      |
| <b>MOTOR ACTIVITY</b>             |          |        |         |        |         |        |         |        |         |        |          |        |          |        |          |        |
|                                   | -        | N/A    | N/A      | N/A    | N/A      | N/A    | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | - |

\*Differences between treated groups and control group, significant ( $P < 0.05$ )  
 H = high dose, M = mid-dose, L = low dose  
 p.d.: Post Dose  
 h: hour  
 d: day  
 N/A = Not Applicable

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX G**

Historical Control Data for Serum Chemistry (WIL Research Laboratories, Inc.)

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### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

A/G

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 2.35  |
| Min | 1.73  |
| Max | 3.11  |
| SD  | 0.335 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 1.86  |
| Min | 1.46  |
| Max | 2.42  |
| SD  | 0.250 |

Summary for 'TEST' = A/G (98 detail records)

|     |       |
|-----|-------|
| Avg | 2.11  |
| Min | 1.46  |
| Max | 3.11  |
| SD  | 0.384 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

| Test | Sex |
|------|-----|
|------|-----|

**ALB****F****Summary for 'SEX' = F (49 detail records)**

|     |       |
|-----|-------|
| Avg | 5.18  |
| Min | 4.00  |
| Max | 6.20  |
| SD  | 0.445 |

**M****Summary for 'SEX' = M (49 detail records)**

|     |       |
|-----|-------|
| Avg | 4.53  |
| Min | 4.10  |
| Max | 4.90  |
| SD  | 0.170 |

**Summary for 'TEST' = ALB (98 detail records)**

|     |       |
|-----|-------|
| Avg | 4.86  |
| Min | 4.00  |
| Max | 6.20  |
| SD  | 0.469 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**ALP**

**F**

Summary for 'SEX' = F (49 detail records)

|     |        |
|-----|--------|
| Avg | 61.47  |
| Min | 24.00  |
| Max | 142.00 |
| SD  | 20.673 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 114.51 |
| Min | 61.00  |
| Max | 196.00 |
| SD  | 32.344 |

Summary for 'TEST' = ALP (98 detail records)

|     |        |
|-----|--------|
| Avg | 87.99  |
| Min | 24.00  |
| Max | 196.00 |
| SD  | 37.944 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**ALT**

**F**

**Summary for 'SEX' = F (49 detail records)**

|     |         |
|-----|---------|
| Avg | 57.86   |
| Min | 22.00   |
| Max | 940.00  |
| SD  | 130.990 |

**M**

**Summary for 'SEX' = M (49 detail records)**

|     |       |
|-----|-------|
| Avg | 38.35 |
| Min | 25.00 |
| Max | 59.00 |
| SD  | 7.111 |

**Summary for 'TEST' = ALT (98 detail records)**

|     |        |
|-----|--------|
| Avg | 48.10  |
| Min | 22.00  |
| Max | 940.00 |
| SD  | 92.800 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**AST**

**F**

Summary for 'SEX' = F (49 detail records)

|     |         |
|-----|---------|
| Avg | 115.27  |
| Min | 56.00   |
| Max | 1002.00 |
| SD  | 136.636 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 88.57  |
| Min | 61.00  |
| Max | 150.00 |
| SD  | 20.791 |

Summary for 'TEST' = AST (98 detail records)

|     |         |
|-----|---------|
| Avg | 101.92  |
| Min | 56.00   |
| Max | 1002.00 |
| SD  | 98.144  |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**BILI**

**F**

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 0.23  |
| Min | 0.10  |
| Max | 1.50  |
| SD  | 0.191 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 0.18  |
| Min | 0.10  |
| Max | 0.50  |
| SD  | 0.067 |

Summary for 'TEST' = BILI (98 detail records)

|     |       |
|-----|-------|
| Avg | 0.21  |
| Min | 0.10  |
| Max | 1.50  |
| SD  | 0.145 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

#### BUN

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 15.82 |
| Min | 8.30  |
| Max | 29.90 |
| SD  | 3.665 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 13.43 |
| Min | 6.80  |
| Max | 21.50 |
| SD  | 3.554 |

Summary for 'TEST' = BUN (98 detail records)

|     |       |
|-----|-------|
| Avg | 14.53 |
| Min | 6.80  |
| Max | 29.90 |
| SD  | 3.757 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

CA

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 10.29 |
| Min | 9.30  |
| Max | 11.80 |
| SD  | 0.563 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 9.96  |
| Min | 9.00  |
| Max | 10.90 |
| SD  | 0.388 |

Summary for 'TEST' = CA (95 detail records)

|     |       |
|-----|-------|
| Avg | 10.12 |
| Min | 9.00  |
| Max | 11.80 |
| SD  | 0.509 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**CHOL**

**F**

Summary for 'SEX' = F (49 detail records)

|     |        |
|-----|--------|
| Avg | 75.24  |
| Min | 38.00  |
| Max | 132.00 |
| SD  | 20.015 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 60.96  |
| Min | 35.00  |
| Max | 126.00 |
| SD  | 17.033 |

Summary for 'TEST' = CHOL (98 detail records)

|     |        |
|-----|--------|
| Avg | 68.10  |
| Min | 35.00  |
| Max | 132.00 |
| SD  | 19.833 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

CL

F

Summary for 'SEX' = F (49 detail records)

|     |        |
|-----|--------|
| Avg | 101.61 |
| Min | 96.00  |
| Max | 108.00 |
| SD  | 2.584  |

M

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 100.76 |
| Min | 97.00  |
| Max | 107.00 |
| SD  | 1.985  |

Summary for 'TEST' = CL (98 detail records)

|     |        |
|-----|--------|
| Avg | 101.18 |
| Min | 96.00  |
| Max | 108.00 |
| SD  | 2.321  |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**CREA**

**F**

*Summary for 'SEX' = F (49 detail records)*

|     |       |
|-----|-------|
| Avg | 0.37  |
| Min | 0.20  |
| Max | 0.50  |
| SD  | 0.068 |

**M**

*Summary for 'SEX' = M (49 detail records)*

|     |       |
|-----|-------|
| Avg | 0.28  |
| Min | 0.20  |
| Max | 0.40  |
| SD  | 0.069 |

*Summary for 'TEST' = CREA (98 detail records)*

|     |       |
|-----|-------|
| Avg | 0.32  |
| Min | 0.20  |
| Max | 0.50  |
| SD  | 0.083 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

GGT

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 0.41  |
| Min | 0.00  |
| Max | 6.00  |
| SD  | 0.934 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 0.27  |
| Min | 0.00  |
| Max | 2.00  |
| SD  | 0.569 |

Summary for 'TEST' = GGT (98 detail records)

|     |       |
|-----|-------|
| Avg | 0.34  |
| Min | 0.00  |
| Max | 6.00  |
| SD  | 0.773 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**GLOB**

**F**

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 2.23  |
| Min | 1.80  |
| Max | 2.90  |
| SD  | 0.262 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 2.47  |
| Min | 1.90  |
| Max | 3.00  |
| SD  | 0.282 |

Summary for 'TEST' = GLOB (98 detail records)

|     |       |
|-----|-------|
| Avg | 2.35  |
| Min | 1.80  |
| Max | 3.00  |
| SD  | 0.295 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

**GLU**

**F**

Summary for 'SEX' = F (49 detail records)

|     |        |
|-----|--------|
| Avg | 128.63 |
| Min | 99.00  |
| Max | 156.00 |
| SD  | 14.152 |

**M**

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 135.84 |
| Min | 98.00  |
| Max | 183.00 |
| SD  | 18.050 |

Summary for 'TEST' = GLU (98 detail records)

|     |        |
|-----|--------|
| Avg | 132.23 |
| Min | 98.00  |
| Max | 183.00 |
| SD  | 16.536 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

K

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 5.27  |
| Min | 4.08  |
| Max | 7.26  |
| SD  | 0.567 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 5.31  |
| Min | 4.15  |
| Max | 7.53  |
| SD  | 0.616 |

Summary for 'TEST' = K (98 detail records)

|     |       |
|-----|-------|
| Avg | 5.29  |
| Min | 4.08  |
| Max | 7.53  |
| SD  | 0.639 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

NA

F

Summary for 'SEX' = F (49 detail records)

|     |        |
|-----|--------|
| Avg | 141.71 |
| Min | 139.00 |
| Max | 149.00 |
| SD  | 1.904  |

M

Summary for 'SEX' = M (49 detail records)

|     |        |
|-----|--------|
| Avg | 142.33 |
| Min | 138.00 |
| Max | 148.00 |
| SD  | 1.676  |

Summary for 'TEST' = NA (96 detail records)

|     |        |
|-----|--------|
| Avg | 142.02 |
| Min | 138.00 |
| Max | 149.00 |
| SD  | 1.811  |

---

### Historical Control Serum Chemistry

---

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

Test      Sex

PHOS

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 6.03  |
| Min | 4.00  |
| Max | 7.90  |
| SD  | 0.813 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 6.76  |
| Min | 4.60  |
| Max | 8.60  |
| SD  | 0.952 |

Summary for 'TEST' = PHOS (98 detail records)

|     |       |
|-----|-------|
| Avg | 6.39  |
| Min | 4.00  |
| Max | 8.60  |
| SD  | 0.955 |

---

### Historical Control Serum Chemistry

|                       |               |            |             |
|-----------------------|---------------|------------|-------------|
| Species:              | RAT           | TA Route:  | ORAL GAVAGE |
| Strain:               | CRL:IGS       | Fasted:    | = YES       |
| Age at Test in Weeks: | BETWEEN 17-22 | Finalized: | = YES       |

---

| Test | Sex |
|------|-----|
|------|-----|

TP

F

Summary for 'SEX' = F (49 detail records)

|     |       |
|-----|-------|
| Avg | 7.41  |
| Min | 5.80  |
| Max | 8.80  |
| SD  | 0.525 |

M

Summary for 'SEX' = M (49 detail records)

|     |       |
|-----|-------|
| Avg | 7.00  |
| Min | 6.30  |
| Max | 7.60  |
| SD  | 0.296 |

Summary for 'TEST' = TP (98 detail records)

|     |       |
|-----|-------|
| Avg | 7.20  |
| Min | 5.80  |
| Max | 8.80  |
| SD  | 0.473 |

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**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**APPENDIX H**

**Clinical Pathology Methods, Procedures and References**

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CLINICAL PATHOLOGY METHODS, PROCEDURES AND REFERENCES

**Serum Chemistry - Hitachi 911**

Albumin - Bromcresol Green (BCG) Method, Modification of the Doumas reaction. Hitachi 911 Application Code 012. Boehringer Mannheim Reagent, catalog number 450011.

A/G Ratio - Calculated from Albumin and Globulin Results.

Alkaline Phosphatase - Kinetic reaction measuring the rate of p-nitrophenol liberation. Hitachi 911 Application Code 016. Boehringer Mannheim Reagent, catalog number 450012.

Alanine Aminotransferase - Modification of the International Federation of Clinical Chemistry (IFCC) recommended method. Hitachi 911 Application Code 033. Boehringer Mannheim Reagent, catalog number 450065.

Aspartate Aminotransferase - Kinetic method based on the International Federation of Clinical Chemistry (IFCC) recommendations. Hitachi 911 Application Code 199. Boehringer Mannheim Reagent, catalog number 450064.

Bilirubin (Total) - Diazo method developed by Wahlefeld *et al.* Scand J Clin Lab Invest 1972; 29: Supplement 126. Hitachi 911 Application Code 051. Boehringer Mannheim Reagent, catalog number 1039034.

Blood Urea Nitrogen (BUN) - A urease triggered methodology based upon the method of Talke and Schubert Klin Wschr, 1965; 43:174. Hitachi 911 Application Code 053. Boehringer Mannheim Reagent, catalog number 450021.

Calcium - Modified method using a gamma-amino-butyric acid (GABA) buffer. Hitachi 911 Application Code 043. Boehringer Mannheim Reagent, catalog number 1125621.

Chloride - An ion-selective electrode that measures the electrical potential of the ions present in solution. Hitachi 911 Application Codes 097, 098, and 099. Boehringer Mannheim Reagent, catalog numbers 450041, 450042, and 450043.

Cholesterol - Enzymatic reaction as described by Trinder. Ann Clin Biochem 1974; 12:266. Hitachi 911 Application Code 271. Boehringer Mannheim Reagent, catalog number 450061.

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**Serum Chemistry** (continued)

Creatinine - Modified Jaffe reaction based on the work of Popov *et al.* Biochem Z 1937; 291:354 and Seelig and Wuest, Aerztl Labor 1969; 15:34. Hitachi 911 Application Code 077. Boehringer Mannheim Reagent, catalog number 450019.

Gamma-Glutamyltransferase (GGT) - Method based on the studies of Persijn and Van der Slik, J Clin Chem Clin Biochem, 1976; 14:421. Hitachi 911 Application Code 173. Boehringer Mannheim Reagent, catalog number 450067.

Globulin - Calculation obtained by subtracting Albumin from Total Protein.

Glucose - Glucose hexokinase method based on the work of Schmidt, Peterson and Young. Klin Wschr 1961; 39:1244. Methods of Enzymatic Analysis, 2<sup>nd</sup> Eng ed. New York, Academic Press, 1974:1196. Anal Biochemistry 1958; 23:301. Hitachi 911 Application Code 174. Boehringer Mannheim Reagent, catalog number 450058.

Phosphorus - Method involves the formation of ammonium phosphomolybdate. Hitachi 911 Application Code 133. Boehringer Mannheim Reagent, catalog number 450024.

Potassium - An ion-selective electrode that measures the electrical potential of the ions present in solution. Hitachi 911 Application Codes 097, 098, and 099. Boehringer Mannheim Reagent, catalog numbers 450041, 450042, and 450043.

Sodium - An ion-selective electrode that measures the electrical potential of the ions present in solution. Hitachi 911 Application Codes 097, 098, and 099. Boehringer Mannheim Reagent, catalog number 450041, 450042, and 450043.

Total Protein - Endpoint biuret method that utilizes a sample blank. Hitachi 911 Application Code 155. Boehringer Mannheim Reagent, catalog number 450023.

**Immunoassay**

Rat TSH - solid-phase, two site chemiluminescent enzyme immunoassay for the quantitative measurement of rat thyroid stimulating hormone. Immulite. Diagnostics Products Corporation. Package insert.

Total T3 - solid-phase, chemiluminescent enzyme immunoassay for the quantitative measurement of total circulating triiodothyronine. Immulite. Diagnostics Products Corporation. Package Insert.

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### **Immunoassay (continued)**

Total T4 - solid-phase, chemiluminescent enzyme immunoassay for the quantitative measurement of total circulating thyroxide. Immulite. Diagnostics Products Corporation. Package Insert.

### **Hematology - CELL-DYN® 3500**

HCT - The Hematocrit is the ratio of red blood cells to plasma and is expressed as a percentage of the whole blood volume. The HCT is calculated from the red blood cell count and the mean cell volume as follows:

$$\text{HCT} = (\text{RBC} \times \text{MCV})/10$$

CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

HGB - The Hemoglobin concentration is measured using a modified hemoglobincyanide method. A filtered LED with a wavelength of 540 nm is the light source. A photodetector measures the light that is transmitted. The Hemoglobin is directly measured and expressed in grams of hemoglobin per deciliter of whole blood. CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

MCV - The Mean Cell Volume is the average volume of the individual red blood cells. The MCV is derived from the RBC size distribution data and is expressed in femtoliters. CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

MCH - The Mean Corpuscular Hemoglobin is the average amount of hemoglobin contained in the red blood cell expressed in picograms. The MCH is calculated from the RBC and HGB as follows:

$$\text{MCH} = (\text{HGB}/\text{RBC}) \times 10$$

CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

MCHC - The Mean Corpuscular Hemoglobin Concentration is the ratio of the weight of hemoglobin to the volume of the average red blood cell expressed in percent. It is calculated from the HGB and the HCT as follows:

$$\text{MCHC} = (\text{HGB}/\text{HCT}) \times 100$$

CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

PLT - Platelets are counted and sized by the Aperture Impedance method. The Platelet Count is derived from the histogram after the PLT data has been analyzed by the platelet algorithm. The Platelet Count is expressed as  $\# \times 10^3/\mu\text{l}$ . CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

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### **Hematology - CELL-DYN® 3500** (continued)

RBC Count - The Red Blood Cells are counted and sized by the Aperture Impedance method. The Red Blood Cell Count is directly measured and given the number of RBC's. The RBC Count is expressed as # $\times 10^6$ /µl. CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

WBC Count - The White Blood Cell Count is analyzed in two separate channels. Both an optical and impedance analysis are performed. Combining both methodologies minimizes any interference caused by the presence of fragile WBCs, NRBCs or lyse-resistant RBCs. The WBC Count is expressed as # $\times 10^3$ /µL. CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

WBC Differential Count - The light scatter information is graphically presented in the form of scatterplots. Each cell analyzed is represented by a dot on the scatterplot. The dots are plotted at a point determined by the intersection of the channel information designated on the X and Y axes. The scatter information may be plotted in various combinations to yield different information. The CELL-DYN® 3500 uses the scatterplots to differentiate the WBCs into five subpopulations: Neutrophils, Eosinophils, Lymphocytes, Basophils and Monocytes. CELL-DYN® 3500 Operator's Manual. Abbott Diagnostics.

### **Hematology - Manual Methods**

White Cell Differential - Manual method of counting 100 white cells stained with Wright Giemsa and entered on-line into the data files.

Red Blood Cell Morphology - Manual method of evaluating red blood cells on a Wright Giemsa stained slide and entered into the data files.

### **Coagulation**

Prothrombin Time (Protome-PT) - Photometric clot detection is used to measure and record the time required for plasma specimens to clot by adding an excess of thromboplastin reagent and an optional amount of calcium to citrated plasma. Automated Coagulation Analyzer-Electra 1400C. Medical Laboratory Automation, Inc.

Activated Partial Thromboplastin Time (APTT) - Photometric clot detection is used to measure and record clotting time in a one-stage procedure which consists of recalcifying plasma in the presence of an excess of platelet-like reagent (cephalin) containing a plasma activator. Automated Coagulation Analyzer-Electra 1400C. Medical Laboratory Automation, Inc.

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**Urine Chemistry - CLINITEK® 200+**

CLINITEK® 200+ Urine Chemistry Analyzer and BAYER REAGENT STRIPS. The following is a list of tests that are included:

Bilirubin - This test is based on the coupling of bilirubin with diazotized dichloroaniline in a strongly acid medium. The color ranges through various shades of tan. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Blood - This test is based on the peroxidase-like activity of hemoglobin, which catalyzes the reaction of diisopropylbenzene dihydroperoxide and 3,3<sup>1</sup>,5,5<sup>1</sup>-tetramethylbenzidine. The resulting color ranges from orange through green; very high levels of blood may cause the color development to continue to blue. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Glucose - This test is based on a double sequential enzyme reaction. One enzyme, glucose oxidase, catalyzes the formation of gluconic acid and hydrogen peroxide from the oxidation of glucose. A second enzyme, peroxidase, catalyzes the reaction of hydrogen peroxide with potassium iodide chromogen to oxidize the chromogen to colors ranging from green to brown. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Ketone - This test is based on the development of colors ranging from buff-pink to purple when acetoacetic acid reacts with nitroprusside. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Leukocytes - Granulocytic leukocytes contain esterases that catalyze the hydrolysis of the derivatized pyrrole amino acid ester to liberate 3-hydroxy-5-phenyl pyrrole. This pyrrole then reacts with a diazonium salt to produce a purple product. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Nitrite - This test depends upon the conversion of nitrate to nitrite by the action of Gram negative bacteria in the urine. At the acid pH of the reagent area, nitrite in the urine reacts with p-arsanilic acid to form a diazonium compound. This diazonium compound in turn couples with 1,2,3,4-tetrahydrobenzo(h)quinolin-3-ol to produce a pink color. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

pH - This test is based on a double indicator principle that gives a broad range of colors covering the entire urinary pH range. Colors range from orange through yellow and green to blue. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

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### **Urine Chemistry - CLINITEK® 200+ (continued)**

Protein - This test is based on the protein-error-of-indicators principle. The development of any green color is due to the presence of protein. Colors range from yellow to green-blue. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

Urobilinogen - This test is based on a modified Ehrlich reaction, in which p-diethylaminobenzaldehyde in conjunction with a color enhancer reacts with urobilinogen in a strongly acid medium to produce a pink-red color. Bayer Reagent Strips, Multistix®. Bayer Corporation Diagnostics Division. Package Insert, 5/95.

### **Urine Chemistry**

#### **Macroscopic**

Color and Appearance - Characteristics that are visually inspected and entered on-line into the data files.

Specific Gravity - Measurement obtained by use of hand refractometer which allows for direct determination of specific gravity of urine; entered on-line into the data files. ATAGO Urine Specific Gravity Refractometer. NSG Pression Cells, Inc. Farmington, New York.

#### **Microscopic**

Examination of urine sediment under a microscope and entered on-line into the data files.

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A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX I**

Ophthalmic Examination Report  
(David A. Wilkie, D.V.M., M.S., D.A.C.V.O.  
and Brian C. Gilger, D.V.M., M.S., D.A.C.V.O.)

**Concluding Statement**

**Pertaining to**

**Ophthalmic Examinations**

**Performed During Conduct of**

**Study WIL-186012**

All findings observed during the ophthalmic examinations for the above mentioned study are typical in prevalence and appearance for the species and strain or breed of animals examined. There were no significant differences within or among dose groups or compared to the pretest ophthalmic examinations to suggest a test article-related effect.



Brian C. Gilger, D.V.M., M.S.  
Diplomate A.C.V.O.

12-100

Date

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**A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats**

**APPENDIX J**

**Determination of Test Article Fat Concentration (Wildlife International, Ltd.)**

- 1 -

THE ANALYSIS OF HEXABROMOCYCLODODECANE (HBCD-AS SEPARATE ALPHA,  
BETA, AND GAMMA DIASTEREOMERS) CONCENTRATIONS IN RODENT FAT TISSUE  
FROM A 90-DAY ORAL (GAVAGE) TOXICITY STUDY IN RATS  
IN SUPPORT OF  
WIL RESEARCH LABORATORIES, INC. STUDY NO.: WIL-186012  
WILDLIFE INTERNATIONAL, LTD. PROJECT NO.: 439C-123

- 2 -

**GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT**

**SPONSOR:** Chemical Manufacturers Association's Brominated Flame Retardant Industry Panel

**TITLE:** A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

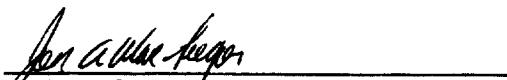
**WIL RESEARCH LABORATORIES, INC. STUDY NO.:** WIL-186012

**WILDLIFE INTERNATIONAL, LTD. PROJECT NO.:** 439C-123

**STUDY COMPLETION:** August 22, 2001

The portion of this study performed by Wildlife International, Ltd. was conducted in compliance with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency in 40 CFR Part 792, 17 August 1989 and OECD, Principles of Good Laboratory Practice [C(97)186/Final].

**PRINCIPAL INVESTIGATOR:**

  
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Jon A. MacGregor  
Scientist  
Wildlife International, Ltd.

DATE

8/22/01

- 3 -

**QUALITY ASSURANCE STATEMENT**

The portion of this study performed by Wildlife International, Ltd. was examined for compliance with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency in 40 CFR Part 792, 17 August 1989; OECD Principles of Good Laboratory Practice, [C(97)186/Final]. The dates of all inspections and audits and the dates that any findings were reported to the Study Director and Laboratory Management were as follows:

| ACTIVITY:              | DATE CONDUCTED:       | STUDY DIRECTOR: | DATE REPORTED TO:<br>MANAGEMENT: |
|------------------------|-----------------------|-----------------|----------------------------------|
| Sample Weighing        | March 20, 2001        | March 27, 2001  | March 27, 2001                   |
| Matrix Fortification   | March 29, 2001        | April 12, 2001  | April 12, 2001                   |
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| Final Report           | August 22, 2001       | August 22, 2001 | August 22, 2001                  |

James H. Coleman  
James H. Coleman  
Quality Assurance Representative

8-22-01  
DATE

# Wildlife International, Ltd.

Study Number WIL-186012

- 4 -

## **REPORT APPROVAL**

SPONSOR: Chemical Manufacturers Association's Brominated Flame Retardant Industry Panel

TITLE: A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

WIL RESEARCH LABORATORIES, INC. STUDY NO.: WIL-186012

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- 5 -

**PERSONNEL INVOLVED IN THE STUDY**

The following key Wildlife International, Ltd. personnel were involved in the conduct or management of this study:

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2. Timothy Z. Kendall, Supervisor
3. Jon A. MacGregor, Scientist
4. Keith Keller, Chemist

**TABLE OF CONTENTS**

|                                                                |    |
|----------------------------------------------------------------|----|
| Title/Cover Page .....                                         | 1  |
| Good Laboratory Practice Compliance Statement.....             | 2  |
| Quality Assurance Statement.....                               | 3  |
| Report Approval.....                                           | 4  |
| Personnel Involved in the Study .....                          | 5  |
| Table of Contents.....                                         | 6  |
| Introduction.....                                              | 8  |
| Analytical Standards .....                                     | 8  |
| Analytical Method.....                                         | 8  |
| Fortification/Calibration Stocks and Standards.....            | 9  |
| Calibration Curve and Limits of Quantitation.....              | 10 |
| Control Matrix, Sample Processing and Weighing .....           | 11 |
| Rodent Fat Tissue Matrix Blank and Fortification Samples ..... | 12 |
| Example Calculations.....                                      | 12 |
| Results .....                                                  | 13 |
| Rodent Fat Tissue Sample Analysis.....                         | 13 |

**TABLES**

|                                                                                                                                                                      |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Table 1. Typical HPLC/MS Operational Parameters.....                                                                                                                 | 15 |
| Table 2. Matrix Blanks and Fortifications Analyzed Concurrently During Rodent Fat Tissue Sample Analyses.....                                                        | 16 |
| Table 3. Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 5 (Control) Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test.....               | 18 |
| Table 4. Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 6 (1000 mg/kg/day) Male Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test .....  | 19 |
| Table 5. Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 6 (1000 mg/kg/day) Female Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test..... | 20 |

**TABLE OF CONTENTS (Continued)****FIGURES**

|           |                                                                                                                                                                               |    |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Figure 1  | Analytical method flow chart for the analysis of hexabromocyclododecane (HBCD) in Rodent Fat Tissue .....                                                                     | 21 |
| Figure 2  | A typical low-level calibration curve for alpha diastereomer of hexabromocyclododecane (HBCD).....                                                                            | 22 |
| Figure 3  | A typical low-level calibration curve for beta diastereomer of hexabromocyclododecane (HBCD).....                                                                             | 23 |
| Figure 4  | A typical low-level calibration curve for gamma diastereomer of hexabromocyclododecane (HBCD).....                                                                            | 24 |
| Figure 5  | A typical high-level calibration curve for alpha diastereomer of hexabromocyclododecane (HBCD).....                                                                           | 25 |
| Figure 6  | A typical high-level calibration curve for beta diastereomer of hexabromocyclododecane (HBCD).....                                                                            | 26 |
| Figure 7  | A typical high-level calibration curve for gamma diastereomer of hexabromocyclododecane (HBCD).....                                                                           | 27 |
| Figure 8  | A representative ion chromatogram of a low-level combined alpha, beta, gamma HBCD diastereomer standard (0.00500 mg a.i./L).....                                              | 28 |
| Figure 9  | A representative ion chromatogram of a high-level combined alpha, beta, gamma HBCD diastereomer standard (2.00 mg a.i./L).....                                                | 29 |
| Figure 10 | A representative chromatogram of a rodent fat tissue matrix blank sample (439C-123-MAB-1).....                                                                                | 30 |
| Figure 11 | A representative chromatogram of a rodent fat tissue matrix fortification sample (439C-123-MAS-1, 0.100 µg alpha, beta, gamma HBCD diastereomer/g nominal concentration)..... | 31 |
| Figure 12 | A representative chromatogram of a control group rodent fat tissue study sample at Day 2 (439C-123-43301; 0.00 mg HBCD test substance/kg/day treatment level).....            | 32 |
| Figure 13 | A representative chromatogram of a treatment group rodent fat tissue study sample at Day 2 (439C-123-43286; 1000 mg HBCD test substance/kg/day treatment level).....          | 33 |
| Figure 14 | A representative chromatogram of a treatment group rodent fat tissue study sample at Day 118 (439C-123-43519; 1000 mg HBCD test substance/kg/day treatment level).....        | 34 |
| Figure 15 | Plot of Days of Exposure vs. Mean Diastereomer Concentration – Male Rodents .....                                                                                             | 35 |
| Figure 16 | Plot of Days of Exposure vs. Mean Diastereomer Concentration – Female Rodents .....                                                                                           | 36 |

- 8 -

**Introduction**

Rodent fat tissue samples were collected by WIL Research Laboratories, Inc. from a 90-day oral (gavage) toxicity study to determine concentration of the test article hexabromocyclododecane (HBCD) as individual alpha, beta and gamma diastereomers. Following collection, the tissue samples were frozen in liquid nitrogen and stored at approximately -70°C until shipment for analysis. After the last samples were collected, the samples were shipped by overnight delivery to the Wildlife International, Ltd analytical chemistry facility in Easton, Maryland for analysis using high performance liquid chromatography with mass spectrometry (HPLC/MS). Upon receipt at the analytical facility the samples were logged in and stored in a freezer at approximately -80°C until analyzed. The study was identified at the analytical facility as Wildlife International, Ltd. Project Number 439C-123. Rodent fat samples were received frozen on August 24, 2000 and analyzed between March 6 and April 5, 2001.

**Analytical Standards**

Separate analytical standards of the alpha, beta and gamma diastereomers of HBCD were received from Albermarle Chemical Corporation on October 30, 2000 and assigned the Wildlife International, Ltd identification numbers of 5417, 5418, and 5419, respectively, upon receipt. The standards were described as white powders and were identified, as: HBCD, Alpha; HBCD, Beta; HBCD, Gamma; CAS number 3194-55-6. The standards had reported purities of 99.4%, 100% and 98.7%, respectively, and were stored under ambient conditions. These analytical standards were used to prepare combined calibration standards and concurrent matrix fortification samples for this study.

**Analytical Method**

The analytical methodology for the analysis of HBCD in rodent fat tissue samples was developed and validated by Wildlife International, Ltd. The method employed an initial extraction of the HBCD test article with tetrahydrofuran (THF) using a combination of a tissue mizer sample processor, centrifugation and manual shaking. The extracts were then purified using an acetonitrile/hexane back-partition clean-up procedure. A method flow chart for the analysis of HBCD (as alpha, beta and gamma diastereomers) in rodent fat tissue is presented in Figure 1.

Concentrations of HBCD (as separate alpha, beta and gamma diastereomers) were determined by high performance liquid chromatography using a Hewlett-Packard Model 1100 High Performance

Liquid Chromatograph (HPLC) equipped with a Perkin-Elmer API 100LC Mass Spectrometer and Perkin-Elmer APCI Heated Nebulizer ion source. Chromatographic separations were achieved using a YMC AM C-18 analytical column (150 mm × 4.6 mm, 3-μm particle size). The typical instrument parameters are summarized in Table 1.

#### **Fortification/Calibration Stocks and Standards**

Combined primary stocks of alpha, beta, and gamma HBCD diastereomers were prepared for use in the study by accurately weighing 0.0500 g (corrected for active ingredient) of each of the individual analytical standards and volumetrically dissolving them in tetrahydrofuran (THF) solvent. The primary stock solutions contained 1000 µg a.i. (alpha, beta, or gamma HBCD)/mL. Combined standard working solutions were prepared from the primary stock solution by dilution as appropriate with THF, yielding standard solutions that ranged from 1.00 to 100 µg alpha, beta and gamma HBCD/mL. The combined standards were used to prepare both the concurrent matrix fortification samples and calibration standards using the following dilution schemes:

#### **Combined Standard Working Solutions:**

| Stock Concentration<br>(mg a.i./mL) | Stock Aliquot<br>(mL) | Final Diluted Volume<br>(mL) | Combined Standard Concentration<br>(µg a.i./mL) | Dilution Solvent |
|-------------------------------------|-----------------------|------------------------------|-------------------------------------------------|------------------|
| 1000                                | 5.00                  | 50.0                         | 100                                             | THF              |
| 100                                 | 5.00                  | 50.0                         | 10.0                                            | THF              |
| 10.0                                | 5.00                  | 50.0                         | 1.00                                            | THF              |

#### **Low-Level Combined Calibration Standards:**

| Combined Stock Concentration<br>(mg a.i./mL) | Stock Aliquot<br>(mL) | Final Diluted Volume<br>(mL) | Combined Standard Concentration<br>(mg a.i./L) | Dilution Solvent             |
|----------------------------------------------|-----------------------|------------------------------|------------------------------------------------|------------------------------|
| 0.0100                                       | 0.0500                | 100                          | 0.00500                                        | 50% THF: 50% Nanopure® water |
| 0.0100                                       | 0.100                 | 100                          | 0.0100                                         | 50% THF: 50% Nanopure® water |
| 0.0100                                       | 0.200                 | 100                          | 0.0200                                         | 50% THF: 50% Nanopure® water |
| 0.0100                                       | 0.300                 | 100                          | 0.0300                                         | 50% THF: 50% Nanopure® water |
| 0.0100                                       | 0.500                 | 100                          | 0.0500                                         | 50% THF: 50% Nanopure® water |

- 10 -

**High-Level Combined Calibration Standards:**

| Combined Stock Concentration<br>( $\mu\text{g a.i./mL}$ ) | Stock Aliquot<br>(mL) | Final Diluted Volume<br>(mL) | Combined Standard Concentration<br>(mg a.i./L) | Dilution Solvent             |
|-----------------------------------------------------------|-----------------------|------------------------------|------------------------------------------------|------------------------------|
| 100                                                       | 0.0500                | 50.0                         | 0.100                                          | 50% THF: 50% Nanopure® water |
| 100                                                       | 0.125                 | 50.0                         | 0.250                                          | 50% THF: 50% Nanopure® water |
| 100                                                       | 0.250                 | 50.0                         | 0.500                                          | 50% THF: 50% Nanopure® water |
| 100                                                       | 0.350                 | 50.0                         | 0.700                                          | 50% THF: 50% Nanopure® water |
| 100                                                       | 0.500                 | 50.0                         | 1.00                                           | 50% THF: 50% Nanopure® water |
| 100                                                       | 1.00                  | 50.0                         | 2.00                                           | 50% THF: 50% Nanopure® water |

All stocks and standards were prepared using a combination of Class A volumetric flasks, volumetric pipets, and/or gas tight syringes. Each stock solution was assigned a unique identification code, which was recorded on a stock preparation log sheet.

**Calibration Curve and Limits of Quantitation**

Two different ranges of combined calibration standards of alpha, beta, and gamma HBCD diastereomers were prepared for the analysis of the study samples. The first set ranged from 0.00500 to 0.0500 mg a.i./L (low-level) and was used in the analysis of all the control group samples and the Day 2 and 6 treatment group samples, only. The second set ranged from 0.100 to 2.00 mg a.i./L (high-level) and was used in the analysis of the remaining treatment group samples. For each analysis, a set of calibration standards was injected at the beginning and end of the analytical run. In addition, a minimum of one standard was injected following every five test samples. Sample results not bracketed by the upper limit of the calibration range in each analysis set were diluted and re-analyzed in a separate analytical set. A calibration curve for each diastereomer was derived from a weighted ( $1/x$ ) regression analysis using the instrumental responses of each individual component of the combined calibration standards. Separate regression equations for the potential quantitation of each diastereomer were generated using the peak area responses of each individual component versus their respective concentrations in the combined standards. Typical calibration curves (low and high level) for the alpha, beta, and gamma HBCD diastereomers are presented in Figures 2-7, respectively. The concentration of HBCD in the rodent fat tissue samples was determined by substituting the peak area responses of each HBCD component into the appropriate weighted ( $1/x$ ) regression equation as follows:



- 11 -

$$\text{HBCD in sample (\mu g a.i./g)} = [(\text{peak area} - \text{y-intercept})/\text{slope}] \times (\text{Final volume}/\text{Initial mass}) \times \text{dilution factor}$$

$$\% \text{ Recovery (QCs only)} = \frac{\text{Measured HBCD concentration (\mu g a.i./g)}}{\text{Nominal HBCD concentration (\mu g a.i./g)}} \times 100$$

Representative ion chromatograms of low and high combined calibration standards are presented in Figures 8 and 9, respectively.

The method limits of quantitation (LOQ) for the analysis of rodent fat samples were calculated as the product of the lowest calibration standard and the dilution factor of the matrix blank samples analyzed concurrently with each set of test samples. For each analysis set, the LOQ was adjusted to best approximate the levels of HBCD diastereomers anticipated to be detected in the treatment samples from the study. LOQ's utilized in sample analyses were 0.0500, 0.0750 or 50.0  $\mu\text{g a.i./g}$  of fat (adipose) tissue (Table 2).

#### **Control Matrix, Sample Processing and Weighing**

Rodent fat tissue from stock animals (I.D. #186012) received from WIL Research Laboratories, Inc. was used for the preparation of quality control samples. The material was received on dry ice on January 26, 2000, was logged in and stored in a freezer at approximately -80°C at the analytical testing facility. Prior to analysis, 1.00 gram aliquots of the control matrix were pre-weighed into 20-mL extraction vials and returned to freezer storage until needed for analyses. At the time of each analysis set, an appropriate number of the pre-weighed tissue aliquots were removed from freezer storage and fortified as necessary to serve as concurrent matrix fortifications for the study.

Definitive study samples were also pre-weighed for analysis. In chronological order starting with the control groups, each study sample was separately logged out of freezer storage. Taking care to minimize thawing, each frozen sample was diced into small pieces to insure homogeneity. Subsequently, approximately 1.00 gram aliquots (nominal) of each study sample were pre-weighed into labeled 20-mL extraction vials and sealed by capping. The weighed samples were then returned to freezer storage until analyzed. Upon analysis, the appropriate samples were logged out from freezer storage and allowed to thaw prior to further processing.

- 12 -

**Rodent Fat Tissue Matrix Blank and Fortification Samples**

Along with the actual rodent fat tissue sample analyses, 10 fat tissue matrix blank quality control samples were analyzed to determine possible interferences. No interferences were observed at or above the applicable LOQs during the study (Table 2). A representative ion chromatogram of a rodent fat tissue matrix blank sample is presented in Figure 10.

For the preparation of matrix fortification (QC) samples, pre-weighed rodent fat tissue samples were removed from freezer storage and fortified with alpha, beta, and gamma HBCD using a combined standard solution of HBCD prepared in THF. Quality control samples were prepared and analyzed concurrently with each sample set to determine the analytical method procedural recovery. For all the control (Group 5) samples and the Day 2 and 6 treatment (Group 6) sample analyses, QC samples were prepared at 0.100 and 1.00 ug a.i./g of fat (adipose) tissue. The procedural recoveries of alpha, beta and gamma HBCD for these low-level analyses ranged from 65.7 to 109% of nominal concentrations (Table 2). For all other treatment group sample analyses (Day 9 through Day 118) QC samples were prepared at concentrations ranging from 100 to 10000 ug a.i./g. Note: the concentration of the QC samples was adjusted based on the results of the each preceding analysis set in an attempt to bracket the residues found for the study. The procedural recoveries of alpha, beta and gamma HBCD for these high-level (treatment group) analyses ranged from 91.6 to 102% of nominal concentrations (Table 2). The overall mean procedural recoveries for alpha, beta, and gamma for the study were 91.5 ± 11%, 94.4 ± 7.5%, and 96.2 ± 6.5%, respectively. A representative ion chromatogram of a rodent fat tissue matrix fortification is presented in Figure 11.

**Example Calculations**

The analytical result and percent recovery (as gamma diastereomer) for rodent fat tissue quality control sample 439C-123-MAS-11 (1.00 ug a.i./g nominal concentration), from the Day 2 HBCD treatment group set, were calculated using the following equations:

$$\text{HBCD -gamma in sample } (\mu\text{g a.i./g}) = \frac{(\text{peak area} - \text{y-intercept})}{\text{slope}} \times \text{overall dilution factor}$$

Peak area = 2777  
Y-intercept = -19.74  
Slope = 286384.38  
(Note: Regression = 1/x weighted)

- 13 -

Initial Mass ( $M_i$ ) = 1.00 g  
Primary final volume ( $V_f$ ) = 5.00 mL  
Primary dilution factor ( $V_f/M_i$ ) = 5.00

Secondary initial volume ( $V_i$ ) = 0.500 mL  
Secondary final volume ( $V_f$ ) = 10.0 mL  
Secondary dilution factor ( $V_f/V_i$ ) = 20.0

Overall Dilution (primary dilution x secondary dilution) = 100

$$\text{HBCD -gamma diastereomer in sample } (\mu\text{g a.i./g}) = \frac{(2777 - 19.74)}{286384.38} \times 100$$

$$\text{HBCD - gamma diastereomer in sample } (\mu\text{g a.i./g}) = 0.977$$

$$\% \text{ Recovery} = \frac{\text{measured HBCD concentration } (\mu\text{g a.i./g})}{\text{nominal HBCD concentration } (\mu\text{g a.i./g})} \times 100$$

$$\% \text{ Recovery} = \frac{0.977 \mu\text{g/g}}{1.00 \mu\text{g/g}} \times 100$$

$$\% \text{ Recovery} = 97.7 \%$$

The above equations and calculations were applied to the analytical data for separate quantitation of the alpha and beta diastereomers of HBCD also.

## RESULTS

### Rodent Fat Tissue Sample Analysis

Rodent fat tissue samples were collected from Satellite Group 5 (control) and Group 6 (1000 mg/kg/day-treatment) on Days 2, 6, 9, 13, 20, 27, 55, 89, 104 and 118 of the study and analyzed for HBCD concentrations (measured as separate alpha, beta, and gamma diastereomers).

Measured concentrations of HBCD (as alpha and beta diastereomers) in the Group 5 (control) samples collected on the Day 2 were all <LOQ (Table 3). Measured concentrations of HBCD (as gamma diastereomer) in the Group 5 (control) samples collected on the Day 2 ranged from 0.172 to 0.439 ug a.i./g. Measured concentrations of HBCD as alpha, beta and gamma diastereomers in the Group 5 (control) samples collected on Days 6, 9, 13, 20, 27, 55, 89, 104 and 188 ranged from 0.0729

- 14 -

to 37.4 ug a.i./g; <LOQ to 5.68 ug a.i./g; and 0.250 to 15.5 ug a.i./g, respectively. A representative ion chromatogram of a Group 5 (control) rodent fat tissue sample on Day 2 is presented in Figure 12.

Measured concentrations of HBCD (as alpha, beta and gamma diastereomers) in the Group 6 (1000 mg/kg/day) male rodent fat samples collected on Day 2 ranged from 250 to 252 ug a.i./g, 53.0 to 61.2 ug a.i./g, and 71.4 to 85.6 ug a.i./g, respectively (Table 4). Measured concentrations of HBCD (as alpha, beta and gamma diastereomers) in the Group 6 (1000 mg/kg/day) male rodent fat samples collected on Days 6, 9, 13, 20, 27, 55, 89, 104 and 118 ranged from 571 to 3129 ug a.i./g, 36.3 to 417 ug a.i./g; and 146 to 578 ug a.i./g, respectively. Representative ion chromatograms of Group 6 (1000 mg/kg/day) rodent fat tissue samples on Day 2 and Day 118 are presented in Figures 13 and 14, respectively. A plot of the days of exposure versus the mean measured HBCD diastereomer concentrations for the male rodents is presented in Figure 15.

Measured concentrations of HBCD (as alpha, beta and gamma diastereomers) in the Group 6 (1000 mg/kg/day) female rodent fat samples collected on Day 2 ranged from 320 to 442 ug a.i./g, 96.9 to 131 ug a.i./g, and 109 to 135 ug a.i./g, respectively (Table 5). Measured concentrations of HBCD (as alpha, beta and gamma diastereomers) in the Group 6 (1000 mg/kg/day) female rodent fat samples collected on Days 6, 9, 13, 20, 27, 55, 89, 104 and 118 ranged from 1318 to 4889 ug a.i./g; 58.5 to 401 ug a.i./g; and 169 to 642 ug a.i./g, respectively. A plot of the days of exposure versus the mean measured HBCD diastereomer concentrations for the female rodents is presented in Figure 16.

- 15 -

**Table 1**  
Typical HPLC/MS Operational Parameters

|                                        |                                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------|
| INSTRUMENT:                            | Hewlett-Packard Model 1100 High Performance Liquid Chromatograph with a Perkin-Elmer API 100LC Mass Spectrometer |
| ION SOURCE:                            | Perkin-Elmer APCI Heated Nebulizer Operated in Selective Ion Monitoring (SIM) Mode                               |
| ANALYTICAL COLUMN:                     | YMC AM C-18 (150 mm × 4.6 mm, 3-μm particle size)                                                                |
| OVEN TEMPERATURE:                      | 40°C                                                                                                             |
| STOP TIME:                             | 12.00 min                                                                                                        |
| FLOW RATE:                             | 0.750 mL/min                                                                                                     |
| MOBILE PHASE:                          | 85% Acetonitrile :15% NANOpure Water® with 0.1% Formic Acid:                                                     |
| INJECTION VOLUME:                      | 100 μL (low level); 25 μL (high level)                                                                           |
| HBCD DIESTEROMER PEAK RETENTION TIMES: | Alpha- ~ 6.4 minutes<br>Beta- ~ 7.0 minutes<br>Gamma- ~ 9.0 minutes                                              |
| HBCD MONITORED MASS:                   | 640.7 amu                                                                                                        |

**Table 2**

Matrix Blanks and Fortifications Analyzed Concurrently During Rodent Fat Tissue Sample Analyses

| Sample Number<br>(439C-123-) | Concentration of HBCD ( $\mu\text{g a.i./g}$ of fat (adipose) tissue) |                                   |                    |                     | Percent Recovery <sup>2</sup> |      |       |
|------------------------------|-----------------------------------------------------------------------|-----------------------------------|--------------------|---------------------|-------------------------------|------|-------|
|                              | Fortified                                                             | Measured<br>(alpha <sup>1</sup> ) | Measured<br>(beta) | Measured<br>(gamma) | alpha                         | beta | gamma |
| MAB-1                        | 0.00                                                                  | <0.0750                           | <0.0750            | <0.0750             | —                             | —    | —     |
| MAS-1                        | 0.100                                                                 | 0.0811                            | 0.0834             | 0.109               | 81.1                          | 83.4 | 109   |
| MAB-2                        | 0.00                                                                  | <0.0500                           | <0.0500            | <0.0500             | —                             | —    | —     |
| MAS-2                        | 0.100                                                                 | 0.0900                            | 0.0981             | 0.104               | 90.0                          | 98.1 | 104   |
| MAS-3                        | 1.00                                                                  | 0.968                             | 0.954              | 0.923               | 96.8                          | 95.4 | 92.3  |
| MAB-3                        | 0.00                                                                  | <0.0500                           | <0.0500            | <0.0500             | —                             | —    | —     |
| MAS-4                        | 0.100                                                                 | 0.0682                            | 0.0802             | 0.0900              | 68.2                          | 80.2 | 90.0  |
| MAS-5                        | 1.00                                                                  | 0.983                             | 0.999              | 0.995               | 98.3                          | 99.9 | 99.5  |
| MAB-4                        | 0.00                                                                  | <0.0500                           | <0.0500            | <0.0500             | —                             | —    | —     |
| MAS-6                        | 0.100                                                                 | 0.0657                            | 0.0809             | 0.0826              | 65.7                          | 80.9 | 82.6  |
| MAS-7                        | 1.00                                                                  | 0.937                             | 0.941              | 0.916               | 93.7                          | 94.1 | 91.6  |
| MAB-5                        | 0.00                                                                  | <0.0500                           | <0.0500            | <0.0500             | —                             | —    | —     |
| MAS-8                        | 0.100                                                                 | 0.0806                            | 0.0827             | 0.0850              | 80.6                          | 82.7 | 85.0  |
| MAS-9                        | 1.00                                                                  | 0.916                             | 0.935              | 0.978               | 91.6                          | 93.5 | 97.8  |
| MAB-6                        | 0.00                                                                  | <0.0500                           | <0.0500            | <0.0500             | —                             | —    | —     |
| MAS-10                       | 0.100                                                                 | 0.0735                            | 0.0845             | 0.0885              | 73.5                          | 84.5 | 88.5  |
| MAS-11                       | 1.00                                                                  | 0.985                             | 0.992              | 0.977               | 98.5                          | 99.2 | 97.7  |
| MAB-7                        | 0.00                                                                  | <50.0                             | <50.0              | <50.0               | —                             | —    | —     |
| MAS-12                       | 100                                                                   | 102                               | 101                | 98.9                | 102                           | 101  | 98.9  |
| MAS-13                       | 2000                                                                  | 1994                              | 1979               | 1962                | 99.7                          | 98.9 | 98.1  |
| MAB-8                        | 0.00                                                                  | <50.0                             | <50.0              | <50.0               | —                             | —    | —     |
| MAS-14                       | 100                                                                   | 97.5                              | 99.4               | 99.3                | 97.5                          | 99.4 | 99.3  |
| MAS-15                       | 3000                                                                  | 2954                              | 2942               | 2946                | 98.5                          | 98.1 | 98.2  |

<sup>1</sup>The limits of quantitation (LOQ) were calculated as the product of the lowest combined calibration standard concentration and the dilution factor of the matrix blank sample analyzed in each analysis set.<sup>2</sup>Results were generated using MacQuan, version 1.6 software. Manual calculations may differ slightly.

**Table 2 (Continued)****Matrix Blanks and Fortifications Analyzed Concurrently During Rodent Fat Tissue Sample Analyses**

| Sample Number<br>(439C-123-) | Concentration of HBCD ( $\mu\text{g a.i./g}$ of fat (adipose) tissue) |                                   |                    |                     | Percent Recovery <sup>2</sup> |       |       |
|------------------------------|-----------------------------------------------------------------------|-----------------------------------|--------------------|---------------------|-------------------------------|-------|-------|
|                              | Fortified                                                             | Measured<br>(alpha <sup>1</sup> ) | Measured<br>(beta) | Measured<br>(gamma) | alpha                         | beta  | gamma |
| MAB-9                        | 0.00                                                                  | <50.0                             | <50.0              | <50.0               | --                            | --    | --    |
| MAS-16                       | 100                                                                   | 99.9                              | 102                | 102                 | 99.9                          | 102   | 102   |
| MAS-17                       | 4000                                                                  | 3963                              | 3994               | 3973                | 99.1                          | 99.9  | 99.3  |
| MAB-10                       | 0.00                                                                  | <50.0                             | <50.0              | <50.0               | --                            | --    | --    |
| MAS-18                       | 100                                                                   | 99.7                              | 101                | 99.9                | 99.7                          | 101   | 99.9  |
| MAS-19                       | 5000                                                                  | 5022                              | 4975               | 4955                | 100                           | 99.5  | 99.1  |
| MAS-20                       | 10000                                                                 | 9498                              | 9578               | 9164                | 95.0                          | 95.8  | 91.6  |
|                              |                                                                       |                                   |                    | Mean =              | 91.5%                         | 94.4% | 96.2% |
|                              |                                                                       |                                   |                    | Std. Dev. =         | 11%                           | 7.5%  | 6.5%  |
|                              |                                                                       |                                   |                    | N =                 | 20                            | 20    | 20    |

<sup>1</sup>The limits of quantitation (LOQ) were calculated as the product of the lowest combined calibration standard concentration and the dilution factor of the matrix blank sample analyzed in each analysis set.<sup>2</sup>Results were generated using MacQuan, version 1.6 software. Manual calculations may differ slightly.

Table 3

Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 5 (Control) Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test

| Nominal Test Concentration (mg/kg/day) | Sample Number (WIL-186012-) | Sampling Time (Day) | Measured Concentration of HBCD <sup>1</sup> ( $\mu\text{g a.i./g}$ of fat (adipose) tissue) |                   |                   | Mean/Standard Deviation ( $\mu\text{g a.i./g}$ of fat (adipose) tissue) |              |             |
|----------------------------------------|-----------------------------|---------------------|---------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------------------------------------------------------------|--------------|-------------|
|                                        |                             |                     | alpha                                                                                       | beta              | gamma             | alpha                                                                   | beta         | gamma       |
| 0.00<br>(Group 5)                      | 43301                       | 2                   | <0.0750                                                                                     | <0.0750           | 0.439             | <0.0750                                                                 | <0.0750      | 0.246       |
|                                        | 43317                       | 2                   | <0.0750                                                                                     | <0.0750           | 0.176             | —                                                                       | —            | $\pm 0.129$ |
|                                        | 43408                       | 2                   | <0.0750                                                                                     | <0.0750           | 0.196             |                                                                         |              |             |
|                                        | 43415                       | 2                   | <0.0750                                                                                     | <0.0750           | 0.172             |                                                                         |              |             |
|                                        | 43319                       | 6                   | 0.140                                                                                       | <0.0750           | 1.36              | 0.179                                                                   | <0.0750      | 1.94        |
|                                        | 43330                       | 6                   | 0.218                                                                                       | <0.0750           | 1.41              | $\pm 0.0412$                                                            | —            | $\pm 0.670$ |
|                                        | 43422                       | 6                   | 0.147                                                                                       | <0.0750           | 2.74              |                                                                         |              |             |
|                                        | 43424                       | 6                   | 0.211                                                                                       | <0.0750           | 2.24              |                                                                         |              |             |
|                                        | 43337                       | 9                   | 0.118                                                                                       | <0.0500           | 1.48              | 0.0943                                                                  | <0.0500      | 1.32        |
|                                        | 43338                       | 9                   | 0.0729                                                                                      | <0.0500           | 1.24              | $\pm 0.0185$                                                            | —            | $\pm 0.116$ |
|                                        | 43434                       | 9                   | 0.0948                                                                                      | <0.0500           | 1.23              |                                                                         |              |             |
|                                        | 43437                       | 9                   | 0.0915                                                                                      | <0.0500           | 1.33              |                                                                         |              |             |
|                                        | 43344                       | 13                  | 0.188                                                                                       | <0.0500           | 2.07              | 0.159                                                                   | <0.0500      | 1.99        |
|                                        | 43345                       | 13                  | 0.0925                                                                                      | <0.0500           | 1.17              | $\pm 0.0579$                                                            | —            | $\pm 0.778$ |
|                                        | 43441                       | 13                  | 0.197                                                                                       | <0.0500           | 2.72              |                                                                         |              |             |
|                                        | 43448                       | 13                  | 37.4 <sup>2</sup>                                                                           | 5.68 <sup>2</sup> | 14.2 <sup>2</sup> |                                                                         |              |             |
|                                        | 43347                       | 20                  | 0.184                                                                                       | <0.0500           | 1.03              | 0.221                                                                   | <0.0500      | 1.68        |
|                                        | 43348                       | 20                  | 0.174                                                                                       | <0.0500           | 1.05              | $\pm 0.0625$                                                            | —            | $\pm 0.743$ |
|                                        | 43450                       | 20                  | 0.311                                                                                       | <0.0500           | 2.27              |                                                                         |              |             |
|                                        | 43451                       | 20                  | 0.216                                                                                       | <0.0500           | 2.38              |                                                                         |              |             |
|                                        | 43358                       | 27                  | 0.112                                                                                       | <0.0500           | 0.667             | 0.205                                                                   | <0.0500      | 1.06        |
|                                        | 43366                       | 27                  | 0.0880                                                                                      | <0.0500           | 0.454             | $\pm 0.124$                                                             | —            | $\pm 0.589$ |
|                                        | 43452                       | 27                  | 0.341                                                                                       | <0.0500           | 1.30              |                                                                         |              |             |
|                                        | 43453                       | 27                  | 0.279                                                                                       | <0.0500           | 1.63              |                                                                         |              |             |
|                                        | 43367                       | 55                  | 5.81                                                                                        | 0.474             | 15.5              | 3.66                                                                    | 0.278        | 10.9        |
|                                        | 43370                       | 55                  | 3.74                                                                                        | 0.187             | 8.32              | $\pm 1.54$                                                              | $\pm 0.132$  | $\pm 3.40$  |
|                                        | 43469                       | 55                  | 2.44                                                                                        | 0.213             | 11.6              |                                                                         |              |             |
|                                        | 43470                       | 55                  | 2.64                                                                                        | 0.237             | 8.37              |                                                                         |              |             |
|                                        | 43375                       | 89                  | 3.14                                                                                        | 0.244             | 9.60              | 2.57                                                                    | 0.131        | 7.09        |
|                                        | 43387                       | 89                  | 1.84                                                                                        | 0.0840            | 4.28              | $\pm 0.561$                                                             | $\pm 0.0755$ | $\pm 2.18$  |
|                                        | 43472                       | 89                  | 2.84                                                                                        | 0.0978            | 7.25              |                                                                         |              |             |
|                                        | 43473                       | 89                  | 2.46                                                                                        | 0.0991            | 7.23              |                                                                         |              |             |
|                                        | 43389                       | 104                 | 1.11                                                                                        | <0.0500           | 1.79              | 1.18                                                                    | 0.0764       | 2.40        |
|                                        | 43390                       | 104                 | 0.144                                                                                       | <0.0500           | 0.250             | $\pm 0.747$                                                             | —            | $\pm 2.05$  |
|                                        | 43487                       | 104                 | 1.72                                                                                        | <0.0500           | 2.39              |                                                                         |              |             |
|                                        | 43498                       | 104                 | 1.73                                                                                        | 0.0764            | 5.16              |                                                                         |              |             |
|                                        | 43394                       | 118                 | 0.389                                                                                       | <0.0500           | 0.734             | 1.32                                                                    | <0.0500      | 2.11        |
|                                        | 43396                       | 118                 | 0.259                                                                                       | <0.0500           | 0.414             | $\pm 1.15$                                                              | —            | $\pm 1.78$  |
|                                        | 43500                       | 118                 | 2.22                                                                                        | <0.0500           | 3.63              |                                                                         |              |             |
|                                        | 43514                       | 118                 | 2.41                                                                                        | <0.0500           | 3.66              |                                                                         |              |             |

1 The limits of quantitation (LOQ) were calculated as the product of the lowest calibration standard and the dilution factor of the matrix blank samples analyzed with each analysis set.

2 Outliers; not used in statistical calculations.

- 19 -

Table 4

Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 6 (1000 mg/kg/day) Male Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test

| Nominal Test Concentration (mg/kg/day) | Sample Number (WIL-186012-) | Sampling Time (Day) | Measured Concentration of HBCD <sup>1</sup> (µg a.i./g of fat (adipose) tissue) |      |       | Mean/Standard Deviation (µg a.i./g of fat (adipose) tissue) |       |        |
|----------------------------------------|-----------------------------|---------------------|---------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------|-------|--------|
|                                        |                             |                     | Alpha                                                                           | Beta | Gamma | Alpha                                                       | Beta  | Gamma  |
| 1000<br>(Group 6)                      | 43286                       | 2                   | 250                                                                             | 53.0 | 71.4  | 251                                                         | 57.1  | 78.5   |
|                                        | 43287                       | 2                   | 252                                                                             | 61.2 | 85.6  | ±1.41                                                       | ±5.80 | ±10.0  |
|                                        | 43291                       | 6                   | 718                                                                             | 123  | 185   | 645                                                         | 120   | 166    |
|                                        | 43294                       | 6                   | 571                                                                             | 117  | 146   | ±104                                                        | ±4.24 | ±27.6  |
|                                        | 43298                       | 9                   | 734                                                                             | 136  | 184   | 856                                                         | 163   | 212    |
|                                        | 43299                       | 9                   | 978                                                                             | 189  | 239   | ±173                                                        | ±37.5 | ±38.9  |
|                                        | 43302                       | 13                  | 1325                                                                            | 236  | 319   | 1247                                                        | 213   | 308    |
|                                        | 43304                       | 13                  | 1168                                                                            | 189  | 296   | ±111                                                        | ±33.2 | ±16.3  |
|                                        | 43314                       | 20                  | 1623                                                                            | 283  | 387   | 1555                                                        | 263   | 376    |
|                                        | 43321                       | 20                  | 1486                                                                            | 242  | 365   | ±96.9                                                       | ±29.0 | ±15.6  |
|                                        | 43324                       | 27                  | 2046                                                                            | 301  | 464   | 2066                                                        | 313   | 465    |
|                                        | 43333                       | 27                  | 2085                                                                            | 324  | 465   | ±27.6                                                       | ±16.3 | ±0.707 |
|                                        | 43343                       | 55                  | 3149                                                                            | 417  | 578   | 2995                                                        | 406   | 547    |
|                                        | 43352                       | 55                  | 2841                                                                            | 395  | 515   | ±218                                                        | ±15.6 | ±44.5  |
|                                        | 43353                       | 89                  | 3073                                                                            | 390  | 519   | 3101                                                        | 392   | 547    |
|                                        | 43356                       | 89                  | 3129                                                                            | 393  | 574   | ±39.6                                                       | ±2.12 | ±38.9  |
|                                        | 43357                       | 104                 | 1652                                                                            | 163  | 303   | 1979                                                        | 218   | 368    |
|                                        | 43360                       | 104                 | 2305                                                                            | 272  | 432   | ±462                                                        | ±77.1 | ±91.2  |
|                                        | 43374                       | 118                 | 1952                                                                            | 36.3 | 158   | 1968                                                        | 72.2  | 195    |
|                                        | 43393                       | 118                 | 1983                                                                            | 108  | 232   | ±21.9                                                       | ±50.7 | ±52.3  |

<sup>1</sup>The limits of quantitation (LOQ) were calculated as the product of the lowest calibration standard and the dilution factor of the matrix blank samples analyzed with each analysis set.

- 20 -

**Table 5**

**Measured Concentrations of Hexabromocyclododecane (HBCD) in Group 6 (1000 mg/kg/day)  
Female Rodent Fat Tissue Samples from a 90 Day Oral (Gavage) Test**

| Nominal Test<br>Concentration<br>(mg/kg/day) | Sample<br>Number<br>(WIL-186012-) | Sampling<br>Time<br>(Day) | Measured Concentration of HBCD <sup>1</sup><br>( $\mu$ g a.i./g of fat (adipose) tissue) |      |       | Mean/Standard Deviation<br>( $\mu$ g a.i./g of fat (adipose) tissue) |            |              |
|----------------------------------------------|-----------------------------------|---------------------------|------------------------------------------------------------------------------------------|------|-------|----------------------------------------------------------------------|------------|--------------|
|                                              |                                   |                           | Alpha                                                                                    | beta | gamma | alpha                                                                | beta       | gamma        |
| 1000<br>(Group 6)                            | 43404                             | 2                         | 320                                                                                      | 96.9 | 109   | 381                                                                  | 114        | 122          |
|                                              | 43406                             | 2                         | 442                                                                                      | 131  | 135   | $\pm 86.3$                                                           | $\pm 24.1$ | $\pm 18.4$   |
|                                              | 43417                             | 6                         | 1318                                                                                     | 217  | 301   | 1470                                                                 | 237        | 328          |
|                                              | 43418                             | 6                         | 1621                                                                                     | 256  | 355   | $\pm 214$                                                            | $\pm 27.6$ | $\pm 38.2$   |
|                                              | 43428                             | 9                         | 1874                                                                                     | 270  | 359   | 1653                                                                 | 238        | 326          |
|                                              | 43445                             | 9                         | 1431                                                                                     | 206  | 293   | $\pm 313$                                                            | $\pm 45.3$ | $\pm 46.7$   |
|                                              | 43447                             | 13                        | 1327                                                                                     | 174  | 251   | 1896                                                                 | 253        | 352          |
|                                              | 43454                             | 13                        | 2465                                                                                     | 332  | 452   | $\pm 805$                                                            | $\pm 112$  | $\pm 142$    |
|                                              | 43459                             | 20                        | 2535                                                                                     | 294  | 467   | 2446                                                                 | 261        | 409          |
|                                              | 43464                             | 20                        | 2356                                                                                     | 227  | 351   | $\pm 127$                                                            | $\pm 47.4$ | $\pm 82.0$   |
|                                              | 43465                             | 27                        | 2895                                                                                     | 294  | 445   | 2962                                                                 | 301        | 438          |
|                                              | 43476                             | 27                        | 3029                                                                                     | 308  | 431   | $\pm 94.8$                                                           | $\pm 9.90$ | $\pm 9.90$   |
|                                              | 43482                             | 55                        | 3714                                                                                     | 282  | 438   | 3402                                                                 | 301        | 438          |
|                                              | 43488                             | 55                        | 3089                                                                                     | 320  | 437   | $\pm 442$                                                            | $\pm 26.9$ | <b>0.707</b> |
|                                              | 43493                             | 89                        | 3794                                                                                     | 312  | 445   | 4342                                                                 | 357        | 544          |
|                                              | 43494                             | 89                        | 4889                                                                                     | 401  | 642   | $\pm 774$                                                            | $\pm 62.9$ | $\pm 139$    |
|                                              | 43499                             | 104                       | 3309                                                                                     | 239  | 429   | 2514                                                                 | 149        | 299          |
|                                              | 43504                             | 104                       | 1719                                                                                     | 58.5 | 169   | $\pm 1124$                                                           | $\pm 128$  | $\pm 184$    |
|                                              | 43507                             | 118                       | 2936                                                                                     | 128  | 353   | 3200                                                                 | 136        | 325          |
|                                              | 43519                             | 118                       | 3464                                                                                     | 144  | 296   | $\pm 373$                                                            | $\pm 11.3$ | $\pm 40.3$   |

<sup>1</sup>The limits of quantitation (LOQ) were calculated as the product of the lowest calibration standard and the dilution factor of the matrix blank samples analyzed with each analysis set.

\*\* Prepare all glassware by successively rinsing with a 5% solution of KOH in methanol (Base), followed by tap water, followed by 10% HCL (Acid), followed by tap water, followed by acetone, followed by Tetrahydrofuran (THF). Allow glassware to set or remove solvent residues using nitrogen.

Weigh 1.00 gram of rat fat tissue sample into 20-mL extraction vial. Fortify concurrent matrix fortification samples using appropriate volumes of HBCD stock solutions prepared in THF solvent. Remove excess THF co-solvent by nitrogen evaporation, if necessary. Prepare matrix blank samples the same way, with the exception of the addition of HBCD test substance. Add ~1.0 grams of anhydrous sodium sulfate to each sample.

Add 10 mL of THF extraction solvent to each sample.

Homogenize each sample for approximately 1 minute using a tissue mizer sample processor.

Cap the vials and centrifuge at 2000 rpm for approximately 5 minutes. Using a disposable pasteur pipette, transfer the organic extract (top layer) to a 50-mL pear shaped flask. Add a second 10-mL aliquot of THF and shake the samples by hand for approximately 1 minute. Centrifuge the sample as above, and combine the extracts in the 50-mL pear shaped flask.

Evaporate the THF extracts in the pear-shaped flasks down to the fat tissue oily residues using rotary evaporation.

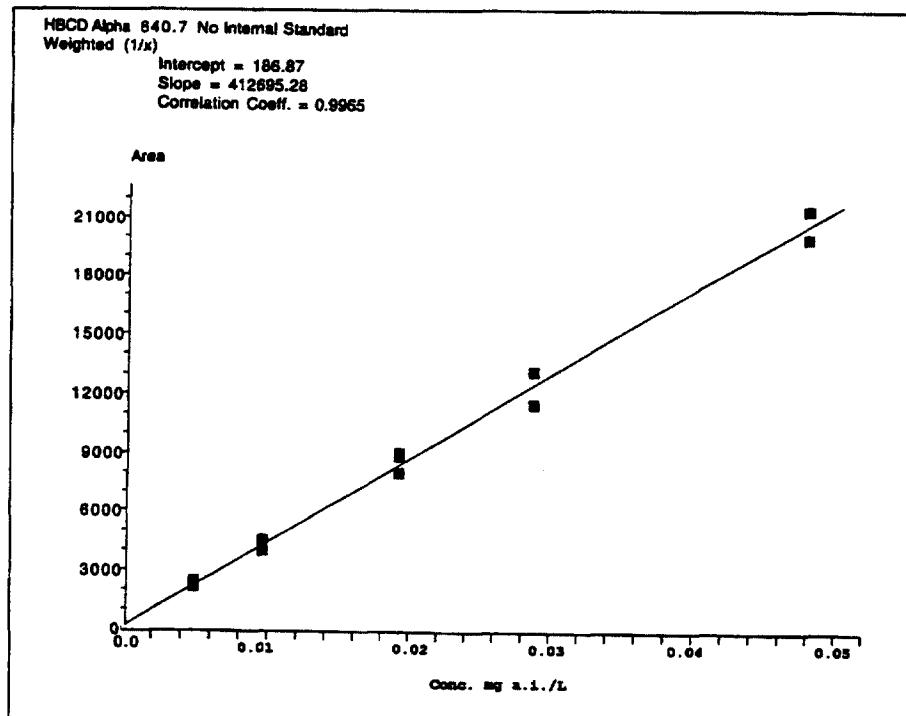
Quantitatively transfer the oily residues from the pear-shaped flasks into 125-mL separatory funnels using 15 mL of hexane. Rinse each flask further using successive 10 and 15-mL rinse volumes of acetonitrile (ACN). Transfer each rinse into the corresponding separatory funnels for each sample. Shake the funnels for approximately 30 seconds. Allow the layers to separate and drain the ACN extract (bottom layer) into 100-mL pear-shaped or round-bottom flasks. Repeat the rinse/extraction with a second 25-mL aliquot of ACN and combine the extracts in the appropriate flasks.

Evaporate the samples to dryness using rotary evaporation. Reconstitute each sample with 5.00 mL or 10 mL volumes of THF solvent using Class A volumetric pipets. Volumetrically dilute a portion of each reconstituted extract either 1:1 with NANOpure® water, with 30% THF:70% NANOpure® water (low-levels) or 50% THF: 50% NANOpure® water (higher levels) such that the final solvent concentration is ~ 50 %THF: 50% NANOpure® water using 15-mL tubes or equivalent. Volumetrically dilute further, as necessary using the 50:50 reagent solution. Mix well before each subsequent dilution with the aid of a bench top vortex apparatus.

Transfer an aliquot of each final diluted extract to an autosampler vial and submit for LC/MS analysis.

Figure 1. Analytical method flow chart for the analysis of hexabromocyclododecane (HBCD) in rodent fat tissue.

- 22 -



**Figure 2.** A typical low-level calibration curve for alpha diastereomer of hexabromocyclododecane (HBCD).

- 23 -

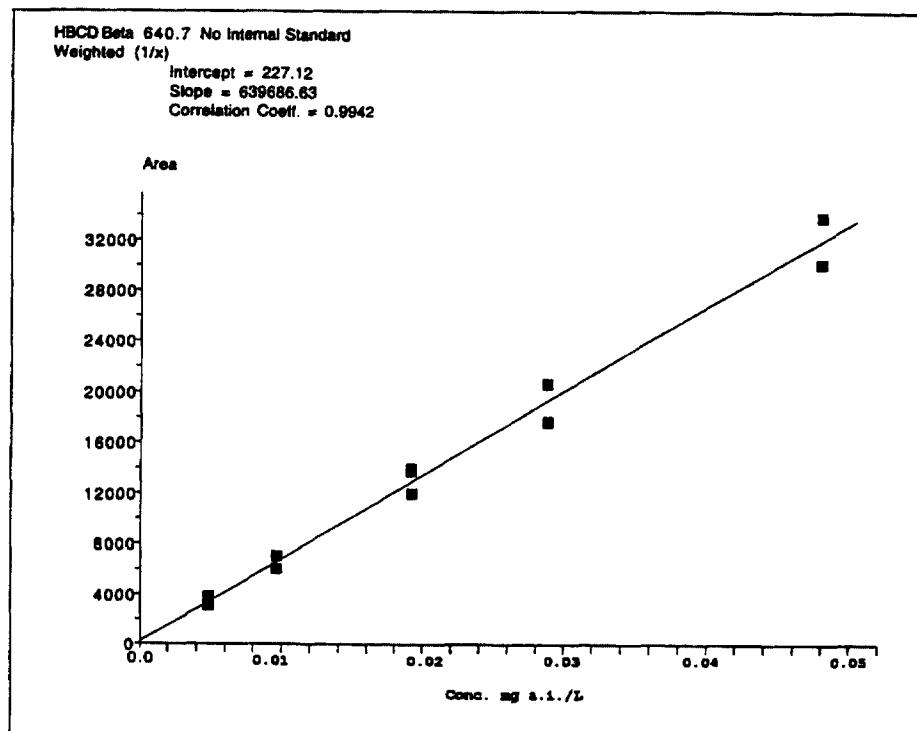


Figure 3. A typical low-level calibration curve for beta diastereomer of hexabromocyclododecane (HBCD).

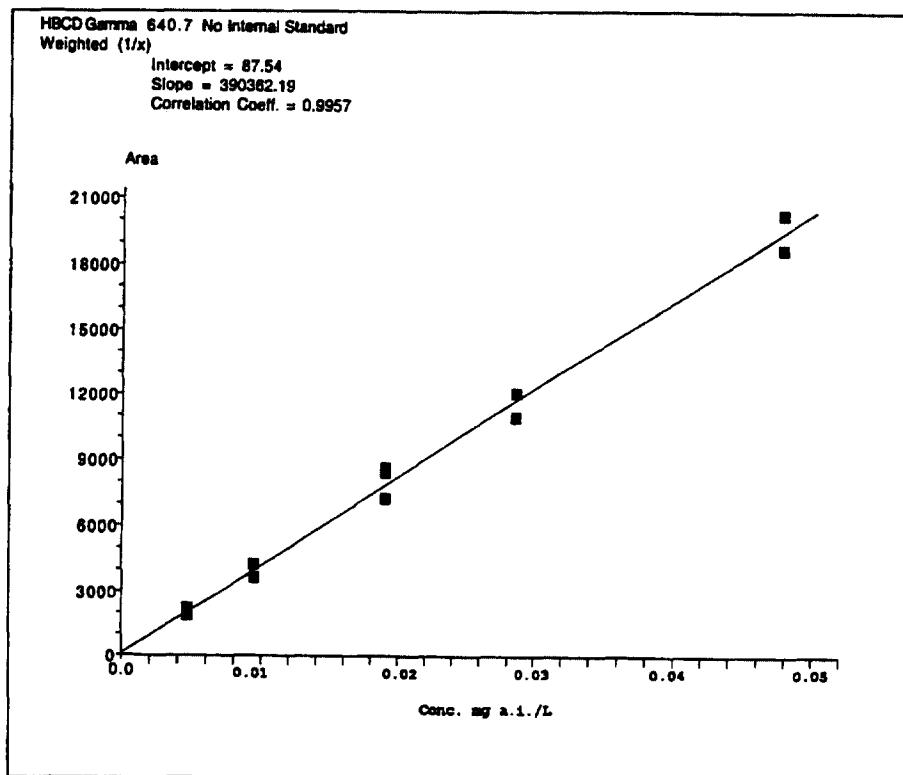


Figure 4. A typical low-level calibration curve for gamma diastereomer of hexabromocyclododecane (HBCD).

- 25 -

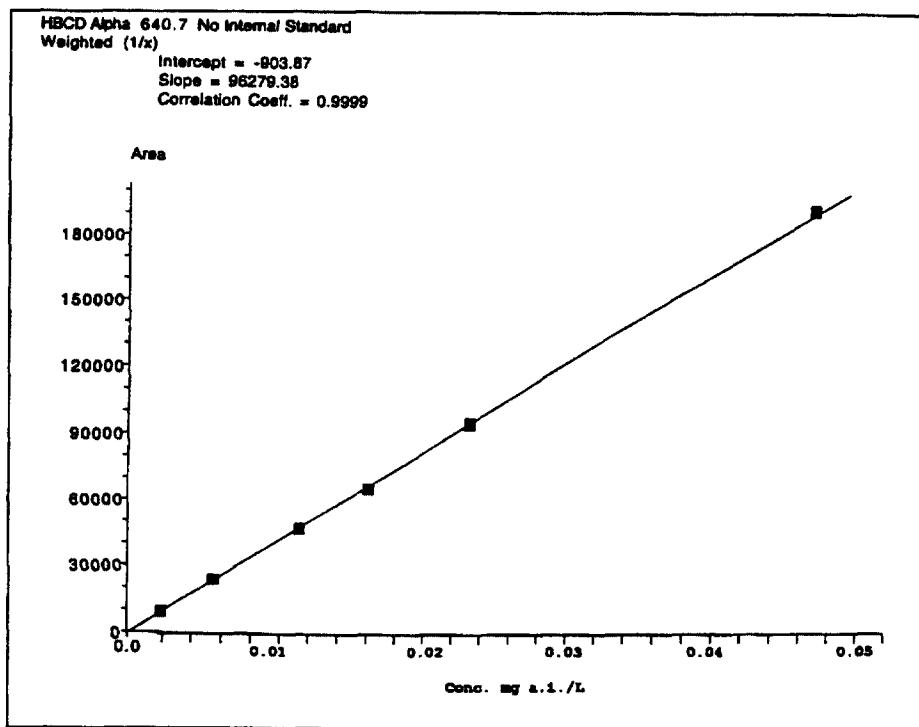
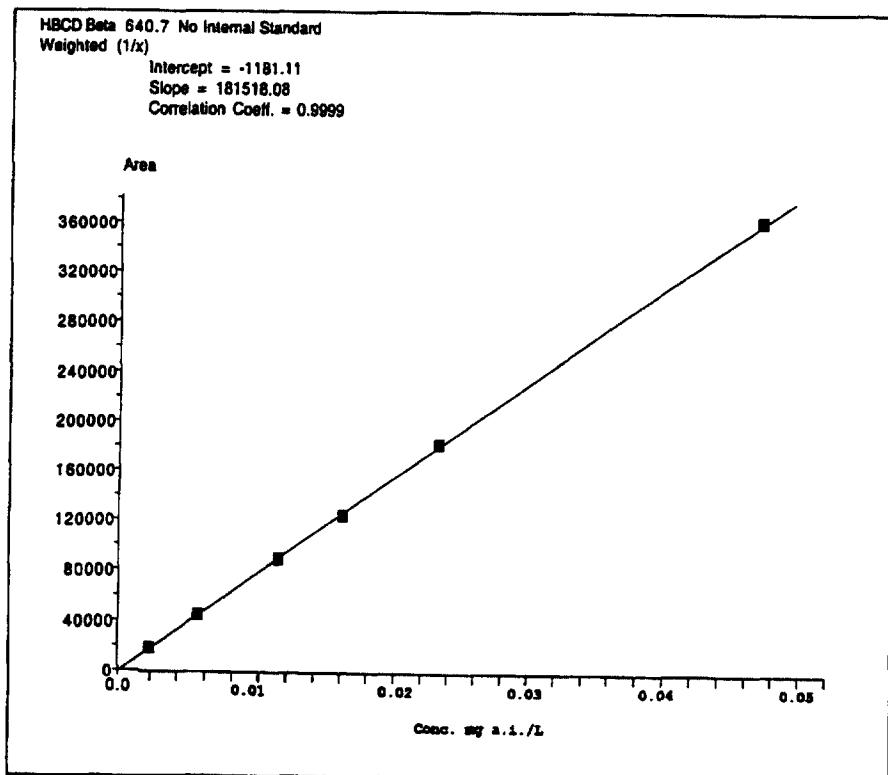


Figure 5. A typical high-level calibration curve for alpha diastereomer of hexabromocyclododecane (HBCD).

- 26 -



**Figure 6.** A typical high-level calibration curve for beta diastereomer of hexabromocyclododecane (HBCD).

- 27 -

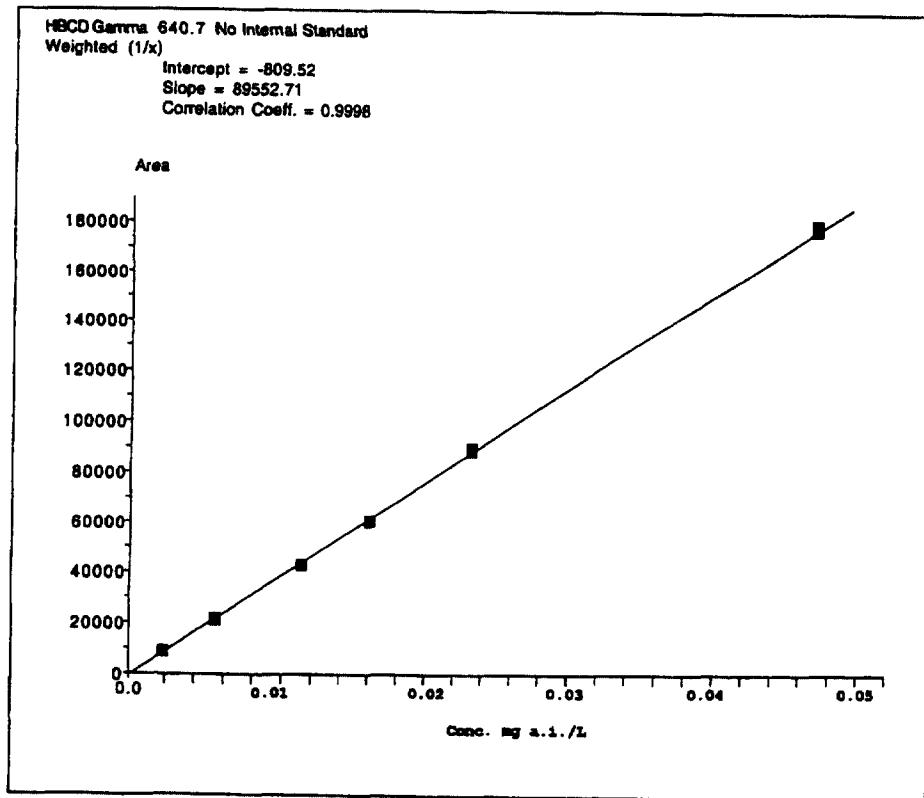


Figure 7. A typical high-level calibration curve for gamma diastereomer of hexabromocyclododecane (HBCD).

- 28 -

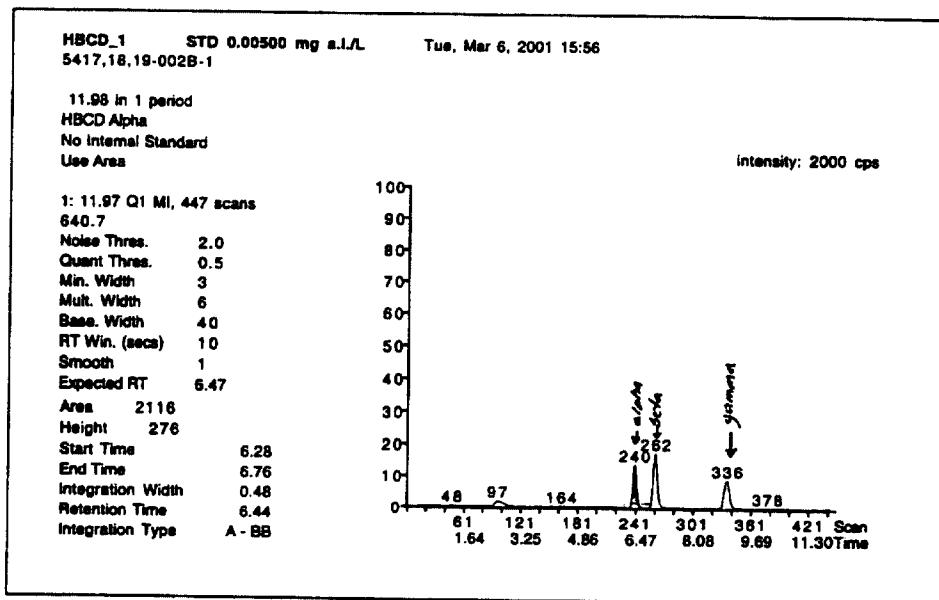


Figure 8. A representative ion chromatogram of a low-level combined alpha, beta, gamma HBCD diastereomer standard (0.00500 mg a.i./L).

- 29 -

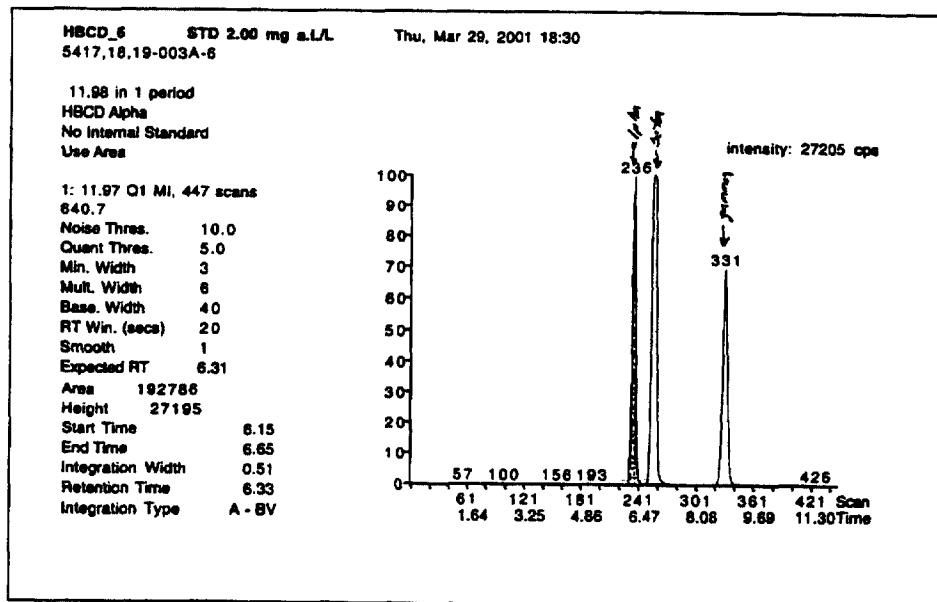
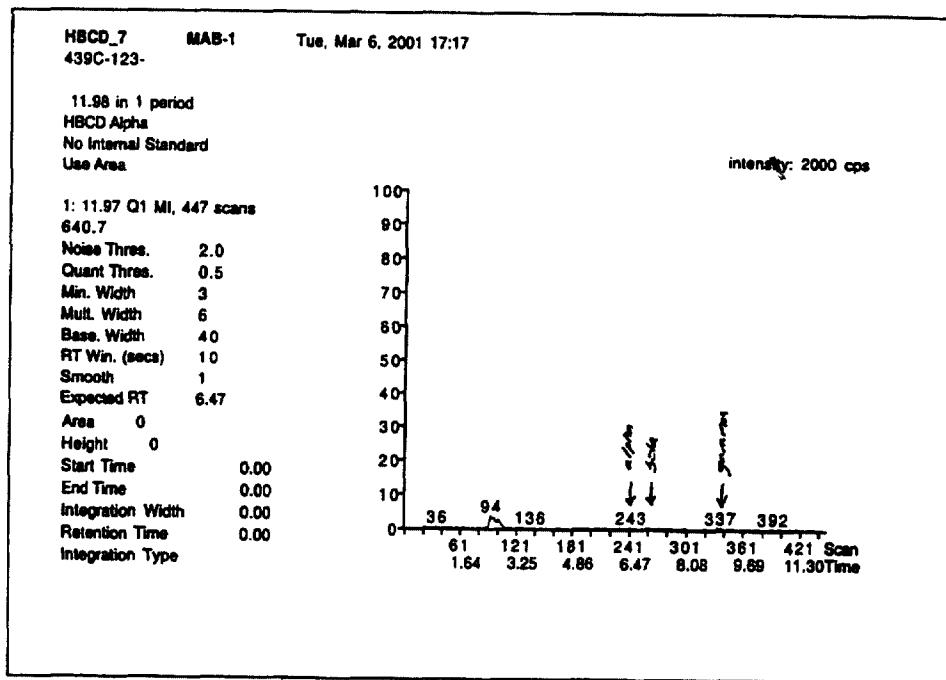


Figure 9. A representative ion chromatogram of a high-level combined alpha, beta, gamma HBCD diastereomer standard (2.00 mg a.i./L).

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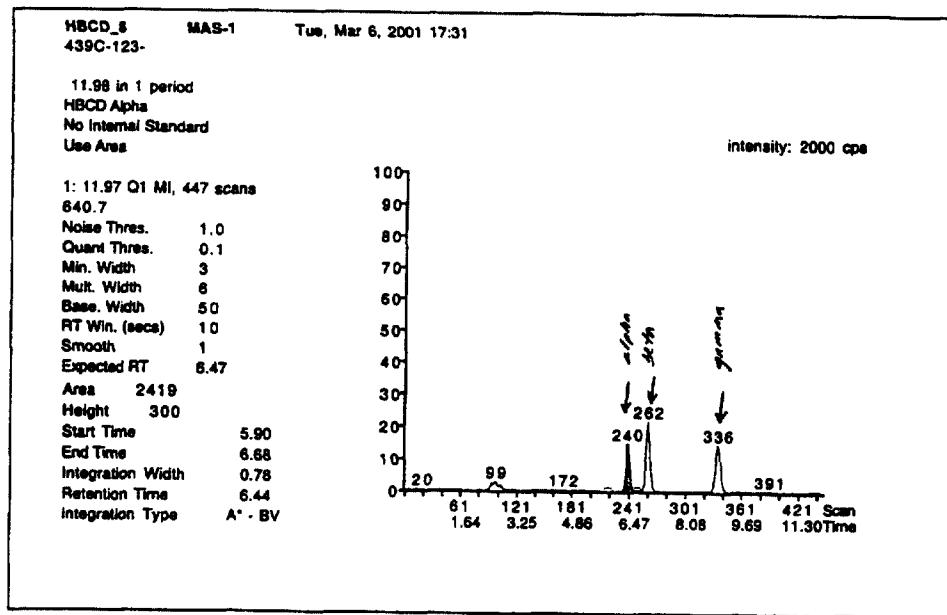
Study Number WIL-186012

- 30 -



**Figure 10.** A representative chromatogram of a rodent fat tissue matrix blank sample (439C-123-MAB-1). The arrows indicate the approximate retention times of the alpha, beta and gamma diastereomers.

- 31 -



**Figure 11.** A representative chromatogram of a rodent fat tissue matrix fortification sample (439C-123-MAS-1, 0.100 µg alpha, beta, gamma HBCD diastereomer/nominal concentration).

- 32 -

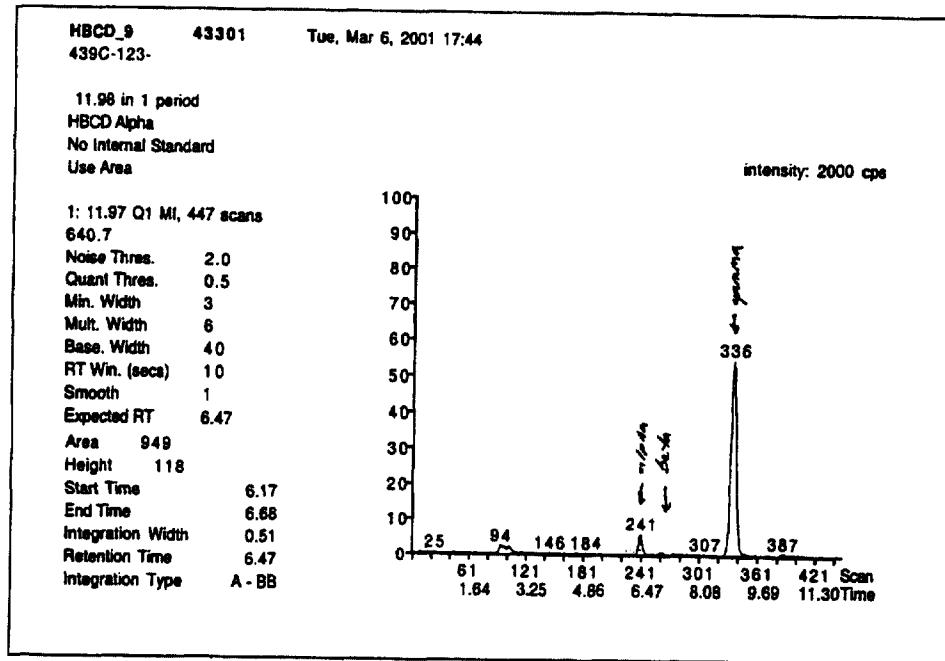
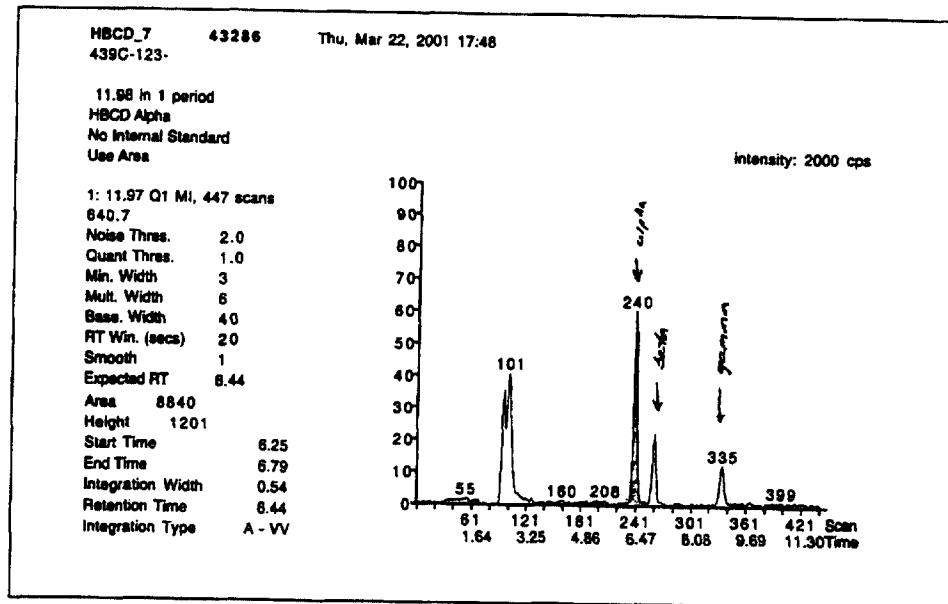


Figure 12. A representative chromatogram of a control group rodent fat tissue study sample at Day 2 (439C-123-43301; 0.00 mg HBCD test substance/kg/day treatment level).

- 33 -



**Figure 13.** A representative chromatogram of a treatment group rodent fat tissue study sample at Day 2 (439C-123-43286; 1000 mg HBCD test substance/kg/day treatment level)

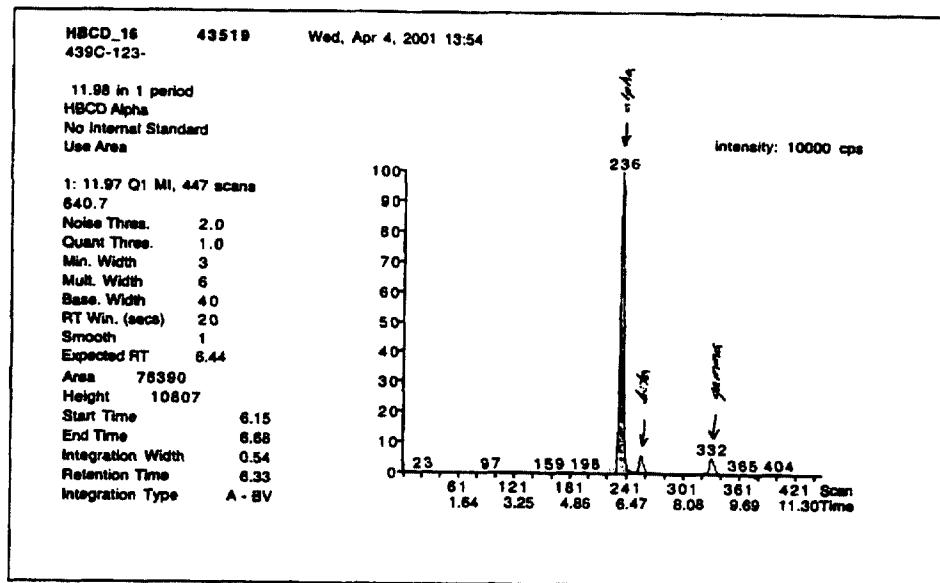


Figure 14. A representative chromatogram of a treatment group rodent fat tissue study sample at Day 118 (439C-123-43519; 1000 mg HBCD test substance/kg/day treatment level).

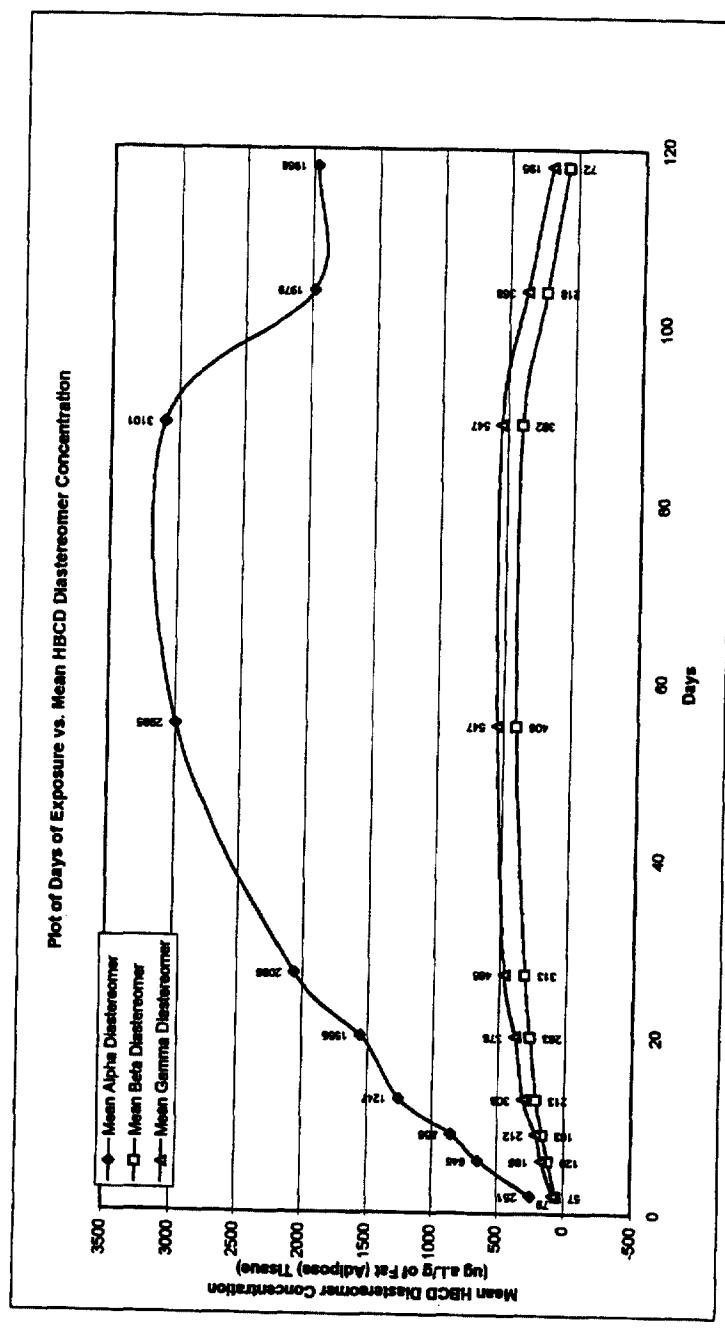


Figure 15. Plot of Days of Exposure vs. Mean Diastereomer Concentration – Male Rodents

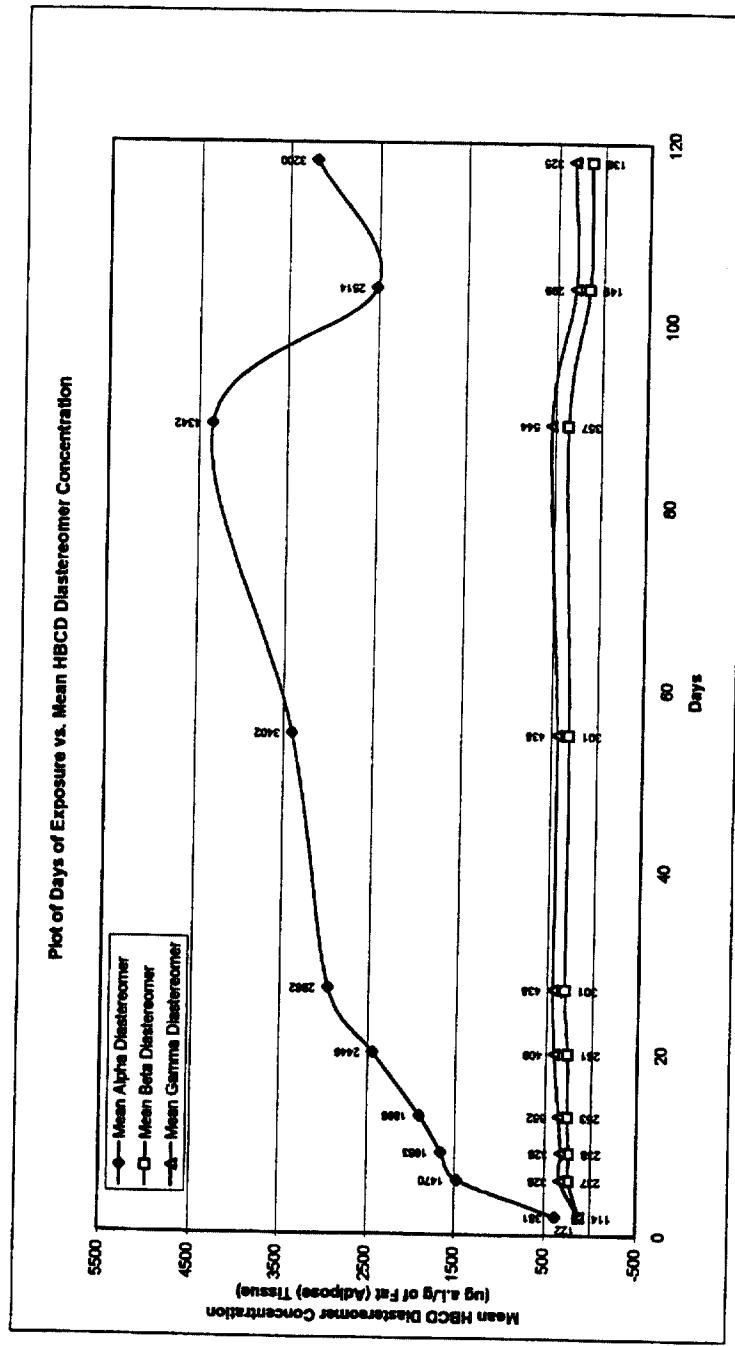


Figure 16. Plot of Days of Exposure vs. Mean Diastereomer Concentration – Female Rodents

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX K**

Individual Clinical Observations

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A. 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|----------|----------|-------|-------|--------------------------------------|
| 43289  | M   | 0 MG/KG/DAY | NORMAL   | 05-02-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-03-00 | 7:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-16-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-23-00 | 7:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-30-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-06-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-13-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-20-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-27-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-04-00 | 11:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-11-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-18-00 | 7:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-25-00 | 12:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-01-00 | 13:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-08-00 | 13:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-15-00 | 13:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-22-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |             |          | 05-02-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-09-00 | 7:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-16-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-23-00 | 7:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-30-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-06-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-13-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-20-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-27-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-04-00 | 11:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|----------|----------|-------|-------|--------------------------------------|
| 43295  | M   | 0 MG/KG/DAY | NORMAL   | 07-11-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-18-00 | 8:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-23-00 | 12:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-01-00 | 13:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-15-00 | 13:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-18-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |             |          | 08-08-00 | 13:50 | P     | OPACITY LEFT EYE                     |
|        |     |             |          | 05-02-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-09-00 | 7:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-16-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-23-00 | 7:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-30-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-06-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-13-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-20-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-27-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-04-00 | 11:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-11-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-18-00 | 8:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-01-00 | 13:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-08-00 | 13:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-15-00 | 13:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-22-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |             |          | 07-25-00 | 12:38 | P     | DRIED RED MATERIAL AROUND NOSE       |
|        |     |             |          | 05-02-00 | 7:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-----------------|----------|-------|-------|--------------------------------------|
| 43316  | M   | 0 MG/KG/DAY | NORMAL          | 05-09-00 | 7:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-16-00 | 9:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 8:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-22-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-23-00 | 11:20 | P     | RECOVERY NECROSY (INTERVAL 17)       |
| 43316  | M   | 0 MG/KG/DAY | DISPOSITION     | 05-30-00 | 9:19  | P     | HAIR LOSS FORELIMB (S)               |
| 43316  | M   | 0 MG/KG/DAY | BODY/INTEGUMENT | 06-06-00 | 7:40  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 06-13-00 | 9:16  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-04-00 | 11:33 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-11-00 | 9:22  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-18-00 | 8:01  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-25-00 | 12:39 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 08-01-00 | 13:56 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 08-08-00 | 13:52 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 08-15-00 | 13:10 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 08-23-00 | 7:55  | P     | HAIR LOSS FORELIMB (S)               |
| 43326  | M   | 0 MG/KG/DAY | NORMAL          | 05-02-00 | 7:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-09-00 | 7:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-16-00 | 9:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-30-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-06-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 8:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-04-00 | 11:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-11-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY             | DATE     | TIME  | GRADE | OBSERVATIONS                                       |
|--------|-----|-------------|----------------------|----------|-------|-------|----------------------------------------------------|
| 43326  | M   | 0 MG/KG/DAY | NORMAL               | 07-18-00 | 8:01  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-25-00 | 12:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 08-01-00 | 13:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 08-15-00 | 13:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)                    |
|        |     |             |                      | 08-08-00 | 13:53 | P     | TAIL BROKEN                                        |
|        |     |             |                      | 08-22-00 | 7:55  | P     | TAIL BROKEN                                        |
|        |     |             |                      | 08-23-00 | 7:47  | P     | TAIL BROKEN                                        |
| 43332  | M   | 0 MG/KG/DAY | NORMAL               | 05-02-00 | 7:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 05-09-00 | 7:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 05-16-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 05-23-00 | 7:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 05-30-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-06-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-13-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-20-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-27-00 | 8:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-04-00 | 11:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-11-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-18-00 | 8:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-25-00 | 12:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 07-28-00 | 11:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS (INTERVAL 13) |
| 43334  | M   | 0 MG/KG/DAY | DISPOSITION NORMAL   | 05-02-00 | 7:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 05-30-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-06-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-20-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |             |                      | 06-27-00 | 8:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
| 43334  | M   | 0 MG/KG/DAY | DISPOSITION MODERATE | 07-28-00 | 11:06 | P     | PRIMARY NECROPSY (INTERVAL 13)                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-----------------|----------|-------|-------|--------------------------------------|
| 43334  | M   | 0 MG/KG/DAY | BODY/INTEGUMENT | 05-09-00 | 7:05  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 05-16-00 | 9:41  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 05-23-00 | 7:33  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 06-13-00 | 9:18  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-04-00 | 11:34 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-11-00 | 9:24  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-18-00 | 8:02  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-25-00 | 12:39 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-28-00 | 11:06 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 07-28-00 | 11:06 | P     | WET YELLOW MATTERIAL ANOGENITAL AREA |
| 43334  | M   | 0 MG/KG/DAY | SPECIAL I       | 05-02-00 | 7:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43336  | M   | 0 MG/KG/DAY | NORMAL          | 05-09-00 | 7:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-16-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-06-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 8:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-04-00 | 11:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-11-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-18-00 | 8:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-25-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-26-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-26-00 | 9:16  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |             |                 | 05-02-00 | 7:10  | P     | HAIR LOSS FORELIMB (S)               |
| 43336  | M   | 0 MG/KG/DAY | DISPOSITION     | 05-09-00 | 7:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43336  | M   | 0 MG/KG/DAY | BODY/INTEGUMENT | 05-30-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43339  | M   | 0 MG/KG/DAY | NORMAL          | 05-16-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-------------|----------|-------|-------|--------------------------------------|
| 433339 | M   | 0 MG/KG/DAY | NORMAL      | 05-03-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-06-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-13-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-20-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-27-00 | 8:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-04-00 | 11:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-11-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-18-00 | 8:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-25-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-28-00 | 11:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-28-00 | 11:10 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 433349 | M   | 0 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-09-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-16-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-23-00 | 7:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-30-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-06-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-13-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-20-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-27-00 | 8:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-04-00 | 11:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-11-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-18-00 | 8:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-25-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-27-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 433349 | M   | 0 MG/KG/DAY | DISPOSITION | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 433365 | M   | 0 MG/KG/DAY | NORMAL      | 05-02-00 | 7:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-09-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-16-00 | 9:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

| ANIMAL | SEX | GROUP       | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-----------------|----------|-------|-------|--------------------------------------|
| 43365  | M   | 0 MG/KG/DAY | NORMAL          | 05-30-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-06-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 8:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-04-00 | 11:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-11-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-18-00 | 8:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-25-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |             | BODY INTEGUMENT | 05-23-00 | 7:35  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             | EYES/EARS/NOSE  | 07-27-00 | 10:25 | P     | DRIED RED MATERIAL AROUND LEFT EYE   |
|        |     |             | ORAL/DENTAL     | 07-27-00 | 10:25 | P     | DRIED RED MATERIAL AROUND NOSE       |
|        |     |             | SPECIAL I       | 07-27-00 | 10:26 | P     | UPPER INCISOR (S) MALIGNED           |
|        |     |             | NORMAL          | 05-02-00 | 7:11  | P     | DRIED BROWN MATERIAL ANOGENITAL AREA |
|        |     |             |                 | 05-09-00 | 7:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-16-00 | 9:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-30-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-06-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 8:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-04-00 | 11:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-11-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-18-00 | 8:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-25-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY  | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-----------|----------|-------|-------|--------------------------------------|
| 43368  | M   | 0 MG/KG/DAY | SPECIAL I | 07-27-00 | 10:29 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA |
| 43369  | M   | 0 MG/KG/DAY | NORMAL    | 05-02-00 | 7:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-09-00 | 7:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-16-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-30-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-06-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-13-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-20-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-27-00 | 8:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-04-00 | 11:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-11-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-18-00 | 8:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-25-00 | 12:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-26-00 | 8:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |             |           | 05-23-00 | 7:36  | P     | SOFT FECES                           |
|        |     |             |           | 05-02-00 | 7:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-09-00 | 7:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-16-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-23-00 | 7:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 05-30-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-06-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-13-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-20-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 06-27-00 | 9:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-04-00 | 11:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-11-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-18-00 | 8:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |           | 07-25-00 | 12:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - MODERATE P - PRESENT

PROJECT NO :WIL-1186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-------------|----------|-------|-------|--------------------------------------|
| 43379  | M   | 0 MG/KG/DAY | NORMAL      | 07-26-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43379  | M   | 0 MG/KG/DAY | DISPOSITION | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43391  | M   | 0 MG/KG/DAY | NORMAL      | 05-02-00 | 7:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-09-00 | 7:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-16-00 | 9:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-23-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-30-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-06-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-13-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-20-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-27-00 | 9:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-04-00 | 11:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-11-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-18-00 | 8:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-25-00 | 12:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-28-00 | 11:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-28-00 | 11:20 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |             |             | 05-02-00 | 7:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-09-00 | 7:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-16-00 | 10:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-23-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 05-30-00 | 9:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-06-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-13-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-20-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 06-27-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-04-00 | 11:50 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-11-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |             | 07-18-00 | 8:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CNA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------|
| 43285  | M   | 100 MG/KG/DAY | NORMAL      | 07-25-00 | 12:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 13:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 8:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43293  | M   | 100 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43293  | M   | 100 MG/KG/DAY | NORMAL      | 05-09-00 | 7:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 10:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-23-00 | 8:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 9:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 11:50 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 13:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 8:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43293  | M   | 100 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43311  | M   | 100 MG/KG/DAY | NORMAL      | 05-09-00 | 7:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 10:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO. : WIL-186012  
 SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------|----------|-------|-------|--------------------------------------|
| 43311  | M   | 100 MG/KG/DAY | NORMAL   | 05-23-00 | 8:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 11:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-01-00 | 14:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-08-00 | 13:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-15-00 | 13:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-22-00 | 8:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |          | 05-02-00 | 7:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 10:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 11:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 9:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-01-00 | 14:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------------|----------|-------|-------|--------------------------------------|
| 43320  | M   | 100 MG/KG/DAY | NORMAL         | 08-08-00 | 13:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-15-00 | 13:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-22-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-23-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43320  | M   | 100 MG/KG/DAY | DISPOSITION    | 07-25-00 | 12:47 | P     | LOWER INCISOR(S) LONG, TRIMMED       |
| 43320  | M   | 100 MG/KG/DAY | ORAL/DENTAL    | 05-02-00 | 7:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43340  | M   | 100 MG/KG/DAY | NORMAL         | 05-09-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 8:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-27-00 | 9:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-04-00 | 11:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-11-00 | 9:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 8:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-01-00 | 14:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-15-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-22-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43340  | M   | 100 MG/KG/DAY | DISPOSITION    | 05-30-00 | 9:42  | P     | DRIED RED MATERIAL AROUND LEFT EYE   |
| 43340  | M   | 100 MG/KG/DAY | EYES/EARS/NOSE | 06-06-00 | 7:50  | P     | CLEAR DISCHARGE LEFT EYE             |
|        |     |               |                | 06-13-00 | 9:46  | P     | RED DISCHARGE LEFT EYE               |
|        |     |               |                | 06-20-00 | 9:49  | P     | DRIED RED MATERIAL AROUND LEFT EYE   |
|        |     |               |                | 08-08-00 | 13:59 | P     | DRIED RED MATERIAL AROUND LEFT EYE   |
| 43340  | M   | 100 MG/KG/DAY | EXCRETA        | 08-23-00 | 7:54  | P     | SOFT FECES                           |
| 43340  | M   | 100 MG/KG/DAY | ORAL/DENTAL    | 07-25-00 | 12:48 | P     | LOWER INCISOR(S) LONG, TRIMMED       |
| 43342  | M   | 100 MG/KG/DAY | NORMAL         | 05-16-00 | 10:22 | P     | UPPER INCISOR(S) BROKEN              |
|        |     |               |                | 05-02-00 | 7:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 8:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------|
| 43342  | M   | 100 MG/KG/DAY | NORMAL      | 05-30-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 11:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 9:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 8:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-28-00 | 11:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               | DISPOSITION | 07-28-00 | 11:19 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43342  | M   | 100 MG/KG/DAY | NORMAL      | 05-02-00 | 7:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43350  | M   | 100 MG/KG/DAY | NORMAL      | 05-09-00 | 7:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-23-00 | 8:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 9:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 11:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 8:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-27-00 | 10:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               | DISPOSITION | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43350  | M   | 100 MG/KG/DAY | NORMAL      | 05-02-00 | 7:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43351  | M   | 100 MG/KG/DAY | NORMAL      | 05-09-00 | 7:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 10:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-196012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                       |
|--------|-----|---------------|-------------|----------|-------|-------|----------------------------------------------------|
| 43351  | M   | 100 MG/KG/DAY | NORMAL      | 05-23-00 | 8:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-30-00 | 9:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-06-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-13-00 | 9:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-20-00 | 9:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-27-00 | 9:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-04-00 | 11:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-11-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-18-00 | 8:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-25-00 | 12:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-27-00 | 10:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)                     |
|        |     |               |             | 05-02-00 | 7:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-09-00 | 7:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-16-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-23-00 | 8:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-30-00 | 9:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-06-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-13-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-20-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 06-27-00 | 9:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-04-00 | 11:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-11-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-18-00 | 8:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-25-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 07-28-00 | 11:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS (INTERVAL 13) |
| 43354  | M   | 100 MG/KG/DAY | DISPOSITION | 07-28-00 | 11:18 | P     | PRIMARY NECROPSY (INTERVAL 13)                     |
|        |     |               |             | 05-02-00 | 7:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |
|        |     |               |             | 05-09-00 | 7:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS               |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------|----------|-------|-------|--------------------------------------|
| 43364  | M   | 100 MG/KG/DAY | NORMAL   | 05-16-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 9:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-26-00 | 8:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-26-00 | 9:18  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |               |          | 07-11-00 | 9:49  | P     | SCABBING END OF TAIL                 |
|        |     |               |          | 06-13-00 | 9:53  | P     | END OF TAIL MISSING                  |
|        |     |               |          | 06-20-00 | 9:55  | P     | END OF TAIL MISSING                  |
|        |     |               |          | 06-27-00 | 9:09  | P     | END OF TAIL MISSING                  |
|        |     |               |          | 07-04-00 | 11:55 | P     | END OF TAIL MISSING                  |
|        |     |               |          | 05-02-00 | 7:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 9:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 11:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-27-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |               |          | 05-16-00 | 10:28 | P     | WET CLEAR MATERIAL AROUND MOUTH      |
|        |     |               |          | 05-02-00 | 7:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP           | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-----------------|----------|----------|-------|-------|--------------------------------------|
| 43380  | M   | 100 MG / KG/DAY | NORMAL   | 05-09-00 | 7:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-16-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-23-00 | 8:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-30-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-06-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-13-00 | 9:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-20-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-27-00 | 9:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-04-00 | 11:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-11-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-18-00 | 8:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-25-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-26-00 | 8:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-26-00 | 9:16  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |                 |          | 05-02-00 | 7:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-09-00 | 7:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-16-00 | 10:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-23-00 | 8:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 05-30-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-06-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-13-00 | 9:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-20-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 06-27-00 | 9:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-04-00 | 11:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-11-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-18-00 | 8:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-25-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-27-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                 |          | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CNA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                                            |
|--------|-----|---------------|----------------|----------|-------|-------|---------------------------------------------------------|
| 43384  | M   | 100 MG/KG/DAY | NORMAL         | 05-02-00 | 7:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-09-00 | 7:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-16-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-23-00 | 8:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-30-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-06-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-13-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-20-00 | 9:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 07-04-00 | 11:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 07-11-00 | 9:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)                          |
| 43384  | M   | 100 MG/KG/DAY | DISPOSITION    | 06-27-00 | 9:10  | P     | DRIED RED MATERIAL AROUND RIGHT EYE                     |
| 43384  | M   | 100 MG/KG/DAY | EYES/EARS/NOSE | 07-13-00 | 12:57 | P     | 6MM X 6MM X 4MM FIRM IMMOVEABLE MASS LEFT SIDE OF MOUTH |
| 43384  | M   | 100 MG/KG/DAY | SPECIAL II     | 07-18-00 | 8:26  | P     | 6MM X 6MM X 4MM FIRM IMMOVEABLE MASS LEFT SIDE OF MOUTH |
|        |     |               |                | 07-25-00 | 12:51 | P     | 6MM X 6MM X 4MM FIRM IMMOVEABLE MASS LEFT SIDE OF MOUTH |
|        |     |               |                | 07-26-00 | 8:49  | P     | 6MM X 6MM X 4MM FIRM IMMOVEABLE MASS LEFT SIDE OF MOUTH |
|        |     |               |                | 05-02-00 | 7:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-09-00 | 7:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-16-00 | 10:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-23-00 | 8:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 05-30-00 | 9:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-06-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-13-00 | 9:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-20-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |
|        |     |               |                | 06-27-00 | 9:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                    |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------------|----------|-------|-------|--------------------------------------|
| 43386  | M   | 100 MG/KG/DAY | NORMAL         | 07-04-00 | 11:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-11-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 8:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-25-00 | 12:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-28-00 | 11:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-28-00 | 11:04 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |               |                | 05-02-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 11:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 8:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-13-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-11-00 | 10:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-15-00 | 13:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43290  | M   | 300 MG/KG/DAY | DISPOSITION    |          |       |       | DRIED RED MATERIAL AROUND RIGHT EYE  |
|        |     |               | EYES/EARS/NOSE |          |       |       |                                      |
|        |     |               | ORAL/DENTAL    |          |       |       |                                      |
|        |     |               |                | 05-30-00 | 10:03 | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 06-06-00 | 8:02  | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 06-06-00 | 8:02  | P     | LOWER INCISOR (S) MALALIGNED         |
|        |     |               |                | 06-27-00 | 9:17  | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 06-27-00 | 9:17  | P     | LOWER INCISOR (S) MALALIGNED         |
|        |     |               |                | 07-04-00 | 12:09 | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 07-04-00 | 12:10 | P     | LOWER INCISOR (S) LONG, TRIMMED      |
|        |     |               |                | 06-20-00 | 10:16 | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 06-20-00 | 10:16 | P     | LOWER INCISOR (S) LONG, TRIMMED      |
|        |     |               |                | 07-25-00 | 12:55 | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 08-01-00 | 14:08 | P     | UPPER INCISOR (S) MALALIGNED         |
|        |     |               |                | 08-01-00 | 14:08 | P     | LOWER INCISOR (S) LONG, TRIMMED      |
|        |     |               |                | 08-08-00 | 14:06 | P     | UPPER INCISOR (S) MISSING            |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR : CNA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------|
| 43290  | M   | 300 MG/KG/DAY | ORAL/DENTAL | 08-08-00 | 14:06 | P     | LOWER INCISOR(S) LONG, TRIMMED       |
|        |     |               |             | 08-22-00 | 8:53  | P     | LOWER INCISOR(S) LONG, TRIMMED       |
|        |     |               |             | 08-22-00 | 8:53  | P     | UPPER INCISOR(S) MALAIGNED           |
|        |     |               |             | 08-23-00 | 7:57  | P     | UPPER INCISOR(S) MALAIGNED           |
|        |     |               |             | 05-30-00 | 10:02 | P     | UPPER INCISOR(S) BROKEN              |
|        |     |               |             | 08-22-00 | 8:53  | P     | UPPER INCISOR(S) BROKEN              |
|        |     |               |             | 08-23-00 | 7:57  | P     | UPPER INCISOR(S) BROKEN              |
|        |     |               |             | 05-02-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-09-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 11:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-23-00 | 8:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 10:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 8:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 10:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 10:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 12:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 10:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 14:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 8:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43307  | M   | 300 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               | NORMAL      | 05-09-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43309  | M   | 300 MG/KG/DAY |             | 05-16-00 | 11:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------|
| 43309  | M   | 300 MG/KG/DAY | NORMAL      | 05-23-00 | 8:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 10:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 8:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 10:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 12:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 14:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 7:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL: 17)     |
|        |     |               | DISPOSITION |          |       |       |                                      |
|        |     |               | NORMAL      | 05-02-00 | 7:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-09-00 | 7:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 11:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-23-00 | 8:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 10:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 8:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 10:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 12:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 12:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------|----------|-------|-------|--------------------------------------|
| 43318  | M   | 300 MG/KG/DAY | NORMAL   | 08-01-00 | 14:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-08-00 | 14:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-15-00 | 13:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-22-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |          | 05-02-00 | 7:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 11:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-20-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 8:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 10:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 10:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 12:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 10:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-01-00 | 14:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-08-00 | 14:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-15-00 | 13:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-22-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |          | 05-02-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 11:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|---------------|----------|----------|-------|-------|---------------------------------------|
| 43323  | M   | 300 MG/KG/DAY | NORMAL   | 05-30-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-06-00 | 8:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-13-00 | 10:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-20-00 | 10:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-27-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-04-00 | 12:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-11-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-18-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-25-00 | 12:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-28-00 | 11:16 | P     | PRIMARY NECROPSY (INTERVAL 1.3)       |
|        |     |               |          | 07-28-00 | 11:16 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |          | 07-28-00 | 11:16 | P     | DRIED BROWN MATERIAL UROGENITAL AREA  |
|        |     |               |          | 05-02-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 05-09-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 05-16-00 | 11:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 05-23-00 | 8:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 05-30-00 | 10:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-06-00 | 8:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-13-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-20-00 | 10:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 06-27-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-04-00 | 12:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-11-00 | 13:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-18-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-25-00 | 12:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-26-00 | 8:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 07-26-00 | 9:18  | P     | PRIMARY NECROPSY (INTERVAL 1.3)       |
|        |     |               |          | 05-02-00 | 7:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |          | 05-09-00 | 7:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-1B6012  
SPONSOR: CMA-BFRP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: Q4 26-00 TO Q8-23-00

| ANIMAL SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|------------|---------------|----------|----------|-------|-------|--------------------------------------|
| 43341 M    | 300 MG/KG/DAY | NORMAL   | 05-30-00 | 10:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-06-00 | 8:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-13-00 | 10:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-20-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-27-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-04-00 | 12:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-11-00 | 13:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-18-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-25-00 | 12:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-27-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|            |               |          | 05-16-00 | 11:17 | P     | DRIED RED MATERIAL AROUND RIGHT EYE  |
|            |               |          | 05-23-00 | 9:00  | P     | DRIED RED MATERIAL AROUND RIGHT EYE  |
|            |               |          | 05-09-00 | 7:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 05-16-00 | 11:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 05-23-00 | 9:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 05-30-00 | 10:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-06-00 | 8:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-13-00 | 10:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-20-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 06-27-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-04-00 | 12:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-11-00 | 13:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-18-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-25-00 | 12:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-28-00 | 11:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|            |               |          | 07-28-00 | 11:17 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|            |               |          | 05-02-00 | 7:37  | P     | SCABBING VENTRAL NECK AREA           |
|            |               |          | 05-02-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WTL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------|----------|-------|-------|--------------------------------------|
| 43361  | M   | 300 MG/KG/DAY | NORMAL   | 05-09-00 | 7:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 11:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 9:01  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 10:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 8:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 10:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 10:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 12:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 13:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-28-00 | 11:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-28-00 | 11:07 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |               |          | 05-02-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 11:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 9:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 10:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 8:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 12:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 10:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 12:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 13:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-26-00 | 8:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-26-00 | 9:15  | P     | PRIMARY NECROPSY (INTERVAL 13)       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------------|----------|-------|-------|--------------------------------------|
| 43383  | M   | 300 MG/KG/DAY | NORMAL         | 05-02-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 11:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 9:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-30-00 | 10:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-06-00 | 8:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-13-00 | 12:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-20-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-27-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-04-00 | 12:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-11-00 | 13:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-25-00 | 12:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |               |                | 07-27-00 | 10:21 | P     | DRIED RED MATERIAL AROUND NOSE       |
|        |     |               |                | 07-27-00 | 10:21 | P     | WET YELLOW MATERIAL UROGENITAL AREA  |
| 43383  | M   | 300 MG/KG/DAY | DISPOSITION    |          |       |       |                                      |
| 43383  | M   | 300 MG/KG/DAY | EYES/EARS/NOSE |          |       |       |                                      |
| 43383  | M   | 300 MG/KG/DAY | EXCRETA        |          |       |       |                                      |
| 43385  | M   | 300 MG/KG/DAY | NORMAL         |          |       |       |                                      |
|        |     |               |                | 05-02-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 11:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 9:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-30-00 | 10:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-06-00 | 8:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-13-00 | 12:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-20-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-27-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-25-00 | 12:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-27-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------------|----------|-------|-------|--------------------------------------|
| 43385  | M   | 300 MG/KG/DAY | EYES/EARS/NOSE | 07-04-00 | 12:16 | P     | DRIED RED MATERIAL AROUND RIGHT EYE  |
| 43388  | M   | 300 MG/KG/DAY | NORMAL         | 07-11-00 | 13:18 | P     | DRIED RED MATERIAL AROUND RIGHT EYE  |
|        |     |               |                | 05-02-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 11:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 9:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-30-00 | 10:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-06-00 | 8:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-13-00 | 12:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-20-00 | 10:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-27-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-04-00 | 12:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-11-00 | 13:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-25-00 | 12:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-27-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-27-00 | 13:00 | P     | PRIMARY NECROSIS (INTERVAL 13)       |
|        |     |               |                | 05-02-00 | 7:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-09-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-16-00 | 11:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-23-00 | 9:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 05-30-00 | 10:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-06-00 | 8:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-13-00 | 12:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-20-00 | 10:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 06-27-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-04-00 | 12:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-18-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                | 07-25-00 | 12:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
 SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|----------------|-----------------|----------|-------|-------|--------------------------------------|
| 43392  | M   | 300 MG/KG/DAY  | NORMAL          | 07-26-00 | 8:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43392  | M   | 300 MG/KG/DAY  | DISPOSITION     | 07-26-00 | 9:14  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43392  | M   | 300 MG/KG/DAY  | ORAL/DENTAL     | 07-11-00 | 13:20 | P     | WET CLEAR MATERIAL VENTRAL NECK      |
| 43392  | M   | 300 MG/KG/DAY  | SPECIAL I       | 07-11-00 | 13:19 | P     | WET CLEAR MATERIAL FORELIMB (S)      |
| 43277  | M   | 1000 MG/KG/DAY | NORMAL          | 05-02-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-09-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-16-00 | 12:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 08-08-00 | 14:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |                | BODY/INTEGUMENT | 05-23-00 | 9:12  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 05-30-00 | 10:23 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 06-06-00 | 8:13  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 06-13-00 | 12:17 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 06-20-00 | 10:42 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 06-27-00 | 9:27  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 07-04-00 | 12:26 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 07-11-00 | 13:29 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 07-18-00 | 9:36  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 07-25-00 | 13:06 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 08-01-00 | 14:14 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 08-15-00 | 13:25 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 08-22-00 | 8:57  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 08-23-00 | 7:45  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |                |                 | 05-02-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-09-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-16-00 | 12:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-23-00 | 9:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 05-30-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |                 | 06-06-00 | 8:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                             |
|--------|-----|----------------|-------------|----------|-------|-------|--------------------------------------------------------------------------|
| 43278  | M   | 1000 MG/KG/DAY | NORMAL      | 06-13-00 | 12:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-20-00 | 10:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-27-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-04-00 | 12:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-11-00 | 13:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-18-00 | 9:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-25-00 | 13:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-01-00 | 14:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-08-00 | 14:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-15-00 | 13:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-22-00 | 8:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43278  | M   | 1000 MG/KG/DAY | DISPOSITION | 08-23-00 | 11:21 | P     | RECOVERY NECROSIS (INTERVAL 17)                                          |
| 43278  | M   | 1000 MG/KG/DAY | SPECIAL II  |          |       | P     | 3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP |
| 43280  | M   | 1000 MG/KG/DAY | NORMAL      | 05-02-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-09-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-16-00 | 12:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-30-00 | 10:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-06-00 | 8:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-13-00 | 12:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-20-00 | 10:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-27-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-04-00 | 12:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-11-00 | 13:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-18-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-01-00 | 14:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-08-00 | 14:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-15-00 | 13:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 08-22-00 | 8:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY         | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|----------------|------------------|----------|-------|-------|---------------------------------------|
| 43280  | M   | 1000 MG/KG/DAY | DISPOSITION      | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)       |
| 43280  | M   | 1000 MG/KG/DAY | BEHAVIOR/CNS     | 05-23-00 | 9:14  | P     | UNKEMPT APPEARANCE                    |
| 43280  | M   | 1000 MG/KG/DAY | EYES/EARS/NOSE   | 07-25-00 | 13:07 | P     | DRIED RED MATERIAL AROUND NOSE        |
| 43280  | M   | 1000 MG/KG/DAY | EXCRETA          | 08-23-00 | 7:44  | P     | RED PENILE DISCHARGE                  |
| 43280  | M   | 1000 MG/KG/DAY | SPECIAL I        | 07-25-00 | 13:08 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
| 43281  | M   | 1000 MG/RG/DAY | NORMAL           | 05-02-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-03-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-16-00 | 12:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-23-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-30-00 | 10:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 06-06-00 | 8:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 06-13-00 | 12:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 06-20-00 | 10:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 06-27-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 07-04-00 | 12:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 07-18-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 08-08-00 | 14:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 08-15-00 | 13:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 08-22-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 08-23-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
| 43281  | M   | 1000 MG/KG/DAY | DISPOSITION      | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)       |
| 43281  | M   | 1000 MG/KG/DAY | CARDIO-PULMONARY | 07-11-00 | 13:32 | P     | RALES                                 |
| 43281  | M   | 1000 MG/KG/DAY | EXCRETA          | 08-01-00 | 14:16 | P     | RALES                                 |
| 43281  | M   | 1000 MG/KG/DAY | SPECIAL I        | 07-11-00 | 13:08 | P     | SOFT FECES                            |
| 43282  | M   | 1000 MG/KG/DAY | NORMAL           | 05-02-00 | 7:47  | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
|        |     |                |                  | 05-09-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-16-00 | 12:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |                  | 05-30-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|----------------|-------------|----------|-------|-------|--------------------------------------|
| 43282  | M   | 1000 MG/KG/DAY | NORMAL      | 06-06-00 | 8:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-13-00 | 12:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-20-00 | 10:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-27-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-01-00 | 14:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-08-00 | 14:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-15-00 | 13:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-22-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-23-00 | 7:47  | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |                |             | 08-23-00 | 11:21 | P     | WET CLEAR MATERIAL AROUND MOUTH      |
| 43282  | M   | 1000 MG/KG/DAY | DISPOSITION | 05-23-00 | 9:16  |       |                                      |
| 43282  | M   | 1000 MG/KG/DAY | ORAL/DENTAL | 05-02-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43297  | M   | 1000 MG/KG/DAY | NORMAL      | 05-09-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-16-00 | 12:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-23-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-30-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-06-00 | 8:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-13-00 | 12:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-20-00 | 10:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-27-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-28-00 | 11:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBGD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY      | DATE     | TIME  | GRADE | OBSERVATIONS                                      |
|--------|-----|----------------|---------------|----------|-------|-------|---------------------------------------------------|
| 43297  | M   | 1000 MG/KG/DAY | DISPOSITION   | 07-28-00 | 11:05 | P     | PRIMARY NECROPSY (INTERVAL 13)                    |
| 43325  | M   | 1000 MG/KG/DAY | NORMAL        | 05-02-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-09-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-16-00 | 12:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-23-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-30-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-06-00 | 8:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-13-00 | 12:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-20-00 | 10:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-27-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 07-04-00 | 12:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 07-11-00 | 13:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 07-18-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 07-25-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)                    |
| 43325  | M   | 1000 MG/KG/DAY | DISPOSITION   | 07-27-00 | 13:10 | P     | SOFT FECES                                        |
| 43325  | M   | 1000 MG/KG/DAY | EXCRETA       | 07-27-00 | 10:22 | P     | SCABBING UROGENITAL AREA                          |
| 43325  | M   | 1000 MG/KG/DAY | BODY/INTEG II | 07-25-00 | 13:24 | P     | PROLAPSED PENIS                                   |
| 43325  | M   | 1000 MG/KG/DAY | ACUTES        | 07-27-00 | 10:22 | P     | PROLAPSED PENIS                                   |
| 43325  | M   | 1000 MG/KG/DAY | SPECIAL II    | 07-25-00 | 13:21 | P     | 5MM X 5MM X 5MM FIRM MOVABLE MASS UROGENITAL AREA |
| 43328  | M   | 1000 MG/KG/DAY | NORMAL        | 05-02-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-09-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-16-00 | 12:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-23-00 | 9:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 05-30-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-06-00 | 8:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-13-00 | 12:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-20-00 | 10:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 06-27-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |
|        |     |                |               | 07-04-00 | 12:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS              |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WTI-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                             |
|--------|-----|----------------|-------------|----------|-------|-------|--------------------------------------------------------------------------|
| 43328  | M   | 1000 MG/KG/DAY | NORMAL      | 07-11-00 | 13:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43328  | M   | 1000 MG/KG/DAY | DISPOSITION | 07-26-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43328  | M   | 1000 MG/KG/DAY | SPECIAL II  | 07-26-00 | 9:15  | P     | PRIMARY NECROPSY (INTERVAL 13)                                           |
|        |     |                |             | 07-13-00 | 13:05 | P     | 3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP |
|        |     |                |             | 07-18-00 | 9:40  | P     | 3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP |
|        |     |                |             | 07-25-00 | 13:11 | P     | 3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP |
| 43346  | M   | 1000 MG/KG/DAY | NORMAL      | 05-02-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-09-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-16-00 | 13:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-23-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-30-00 | 10:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-06-00 | 8:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-13-00 | 12:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-20-00 | 10:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 06-27-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-04-00 | 12:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-11-00 | 13:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-18-00 | 9:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-25-00 | 13:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 07-28-00 | 11:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43346  | M   | 1000 MG/KG/DAY | DISPOSITION | 07-28-00 | 11:17 | P     | PRIMARY NECROPSY (INTERVAL 13)                                           |
| 43359  | M   | 1000 MG/KG/DAY | NORMAL      | 05-02-00 | 7:48  | P     | FOUND DEAD                                                               |
| 43359  | M   | 1000 MG/KG/DAY | DISPOSITION | 05-07-00 | 11:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43362  | M   | 1000 MG/KG/DAY | NORMAL      | 05-09-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-09-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |                |             | 05-16-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-10

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|----------------|-------------|----------|-------|-------|--------------------------------------|
| 43362  | M   | 1000 MG/KG/DAY | NORMAL      | 05-23-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-30-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-06-00 | 8:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-13-00 | 12:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-20-00 | 10:50 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-27-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43362  | M   | 1000 MG/KG/DAY | DISPOSITION | 07-27-00 | 10:28 | P     | WET YELLOW MATERIAL UROGENITAL AREA  |
| 43362  | M   | 1000 MG/KG/DAY | EXCRETA     | 07-27-00 | 10:28 | P     | WET YELLOW MATERIAL VENTRAL TRUNK    |
| 43362  | M   | 1000 MG/KG/DAY | SPECIAL I   | 05-02-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43372  | M   | 1000 MG/KG/DAY | NORMAL      | 05-09-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-23-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-30-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-06-00 | 8:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-13-00 | 12:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-20-00 | 10:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-27-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-26-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43372  | M   | 1000 MG/KG/DAY | DISPOSITION | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
| 43372  | M   | 1000 MG/KG/DAY | ORAL/DENTAL | 05-16-00 | 13:04 | P     | WET CLEAR MATERIAL VENTRAL NECK      |
|        |     |                |             | 05-16-00 | 13:04 | P     | WET CLEAR MATERIAL AROUND MOUTH      |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP            | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|------------------|----------|----------|-------|-------|--------------------------------------|
| 43373  | M   | 1000 MG / KG/DAY | NORMAL   | 05-02-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-09-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-16-00 | 13:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-23-00 | 9:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-30-00 | 10:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-06-00 | 8:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-13-00 | 12:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-20-00 | 10:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-27-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-04-00 | 12:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-11-00 | 13:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-18-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-25-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-26-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-26-00 | 9:16  | P     | PRIMARY NECROPSY (INTERVAL 13)       |
|        |     |                  |          | 05-02-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-09-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-16-00 | 13:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-23-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 05-30-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-06-00 | 8:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-13-00 | 12:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-20-00 | 10:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 06-27-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-04-00 | 12:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-11-00 | 13:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-18-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-25-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                  |          | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|----------------|-------------|----------|-------|-------|---------------------------------------|
| 43377  | M   | 1000 MG/KG/DAY | ORAL/DENTAL | 07-27-00 | 10:30 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43377  | M   | 1000 MG/KG/DAY | SPECIAL I   | 07-27-00 | 10:30 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43397  | M   | 1000 MG/KG/DAY | NORMAL      | 07-27-00 | 10:30 | P     | WET BROWN MATERIAL ANOGENITAL AREA    |
|        |     |                |             | 05-02-00 | 7:50  | P     | WET CLEAR MATERIAL FORELIMB (S)       |
|        |     |                |             | 05-09-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-16-00 | 13:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-23-00 | 9:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-30-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-06-00 | 8:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-13-00 | 12:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-20-00 | 10:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-27-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-04-00 | 12:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-11-00 | 13:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-18-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-25-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-28-00 | 11:19 | P     | PRIMARY NECROPSY (INTERVAL 13)        |
|        |     |                |             | 07-28-00 | 11:19 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |                |             | 05-02-00 | 7:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-09-00 | 7:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-16-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-23-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 05-30-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-06-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-13-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-20-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 06-27-00 | 9:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |                |             | 07-04-00 | 11:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|----------|----------|-------|-------|--------------------------------------|
| 43398  | F   | 0 MG/KG/DAY | NORMAL   | 07-11-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-18-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-25-00 | 12:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-01-00 | 13:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-08-00 | 13:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-15-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-22-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |             |          | 05-02-00 | 7:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-09-00 | 7:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-16-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-23-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 05-30-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-06-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-13-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-20-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 06-27-00 | 9:00  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-04-00 | 11:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-11-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-18-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 07-25-00 | 12:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-01-00 | 13:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-08-00 | 13:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-15-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-22-00 | 8:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |          | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |             |          | 05-02-00 | 7:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

**DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS**  
**A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS**  
**INDIVIDUAL CLINICAL OBSERVATIONS**  
**TABLE RANGE: 04-26-00 TO 08-23-00**

A

| ANIMAL | SEX | GROUP       | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|-----------------|----------|-------|-------|--------------------------------------|
| 43409  | F   | 0 MG/KG/DAY | NORMAL          | 05-09-00 | 7:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-16-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-23-00 | 7:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 05-30-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-06-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 9:01  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-04-00 | 11:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-11-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-18-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 07-25-00 | 12:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-01-00 | 13:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-08-00 | 13:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-15-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-22-00 | 8:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-23-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43409  | F   | 0 MG/KG/DAY | DISPOSITION     | 05-02-00 | 7:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43423  | F   | 0 MG/KG/DAY | NORMAL          | 05-09-00 | 7:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-13-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-20-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 06-27-00 | 9:01  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-08-00 | 13:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-22-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                 | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43423  | F   | 0 MG/KG/DAY | DISPOSITION     | 05-16-00 | 9:56  | P     | HAIR LOSS FORELIMB (S)               |
| 43423  | F   | 0 MG/KG/DAY | BODY/INTEGUMENT | 05-23-00 | 7:39  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                 | 05-30-00 | 9:30  | P     | HAIR LOSS FORELIMB (S)               |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE D - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|-------------|----------------|----------|-------|-------|--------------------------------------|
| 43423  | F   | 0 MG/KG/DAY | BODY/INTEGMENT | 06-06-00 | 7:45  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 07-04-00 | 11:41 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 07-11-00 | 9:32  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 07-18-00 | 8:11  | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 07-25-00 | 12:42 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 08-01-00 | 13:59 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 08-15-00 | 13:13 | P     | HAIR LOSS FORELIMB (S)               |
|        |     |             |                | 08-23-00 | 7:46  | P     | HAIR LOSS FORELIMB (S)               |
| 43423  | F   | 0 MG/KG/DAY | BODY/INTEG II  | 05-16-00 | 9:57  | P     | SCABBING FORELIMB (S)                |
| 43432  | F   | 0 MG/KG/DAY | NORMAL         | 05-02-00 | 7:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 05-09-00 | 7:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 05-16-00 | 9:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 05-23-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 05-30-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 06-06-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 06-13-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 06-20-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 06-27-00 | 9:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 07-04-00 | 11:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 07-11-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 07-18-00 | 8:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 07-25-00 | 12:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 08-01-00 | 13:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 08-08-00 | 13:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 08-15-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 08-22-00 | 7:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |             |                | 08-23-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43432  | F   | 0 MG/KG/DAY | DISPOSITION    | 08-23-00 | 11:20 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43433  | F   | 0 MG/KG/DAY | NORMAL         | 05-02-00 | 7:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY               | DATE     | TIME  | GRADE | OBSERVATIONS                                             |
|--------|-----|-------------|------------------------|----------|-------|-------|----------------------------------------------------------|
| 43433  | F   | 0 MG/KG/DAY | NORMAL                 | 05-09-00 | 7:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-16-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-23-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-30-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-06-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-13-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-20-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-27-00 | 9:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-04-00 | 11:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-11-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-18-00 | 8:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-25-00 | 12:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-27-00 | 10:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-27-00 | 12:57 | P     | PRIMARY NECROPSY (INTERVAL, 13)                          |
|        |     |             |                        | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY |
| 43433  | F   | 0 MG/KG/DAY | DISPOSITION SPECIAL II | 05-02-00 | 7:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
| 43433  | F   | 0 MG/KG/DAY | NORMAL                 | 05-09-00 | 7:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-16-00 | 10:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-23-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 05-30-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-06-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-13-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-20-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 06-27-00 | 9:02  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-04-00 | 11:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-11-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-18-00 | 8:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |             |                        | 07-25-00 | 12:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY               | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|-------------|------------------------|----------|-------|-------|------------------------------------------------------------|
| 43435  | F   | 0 MG/KG/DAY | NORMAL                 | 07-28-00 | 11:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43435  | F   | 0 MG/KG/DAY | DISPOSITION SPECIAL II | 07-28-00 | 11:21 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43435  | F   | 0 MG/KG/DAY |                        | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROSIS |
| 43436  | F   | 0 MG/KG/DAY | NORMAL                 | 05-02-00 | 7:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43436  | F   | 0 MG/KG/DAY | DISPOSITION SPECIAL II | 05-09-00 | 7:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43436  | F   | 0 MG/KG/DAY |                        | 07-18-00 | 8:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43436  | F   | 0 MG/KG/DAY |                        | 07-25-00 | 12:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43436  | F   | 0 MG/KG/DAY |                        | 07-28-00 | 11:22 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |             |                        | 05-16-00 | 10:05 | P     | TAIL BROKEN                                                |
|        |     |             |                        | 05-23-00 | 7:42  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 05-30-00 | 9:33  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 06-06-00 | 7:46  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 06-13-00 | 9:34  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 06-20-00 | 9:35  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 06-27-00 | 9:03  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 07-04-00 | 11:43 | P     | TAIL BROKEN                                                |
|        |     |             |                        | 07-11-00 | 9:35  | P     | TAIL BROKEN                                                |
|        |     |             |                        | 07-28-00 | 11:22 | P     | TAIL BROKEN                                                |
|        |     |             |                        | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43438  | F   | 0 MG/KG/DAY | NORMAL                 | 05-02-00 | 7:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 05-09-00 | 7:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 05-16-00 | 10:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 05-23-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 05-30-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 06-06-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 06-13-00 | 9:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43438  | F   | 0 MG/KG/DAY |                        | 06-27-00 | 9:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS / DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|-------------|-------------|----------|-------|-------|------------------------------------------------------------|
| 43438  | F   | 0 MG/KG/DAY | NORMAL      | 07-04-00 | 11:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-11-00 | 9:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-18-00 | 8:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-26-00 | 9:14  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |             |             | 06-20-00 | 9:37  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |             | 07-25-00 | 12:43 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |             | 07-26-00 | 8:46  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |             | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43449  | F   | 0 MG/KG/DAY | NORMAL      | 05-02-00 | 7:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-09-00 | 7:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-16-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-23-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-30-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-06-00 | 7:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-13-00 | 9:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-20-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-27-00 | 9:03  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-04-00 | 11:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-11-00 | 9:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-18-00 | 8:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-25-00 | 12:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-27-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |             |             | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43449  | F   | 0 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43449  | F   | 0 MG/KG/DAY | SPECIAL II  | 05-09-00 | 7:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-16-00 | 10:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|-------------|-----------------|----------|-------|-------|------------------------------------------------------------|
| 43467  | F   | 0 MG/KG/DAY | NORMAL          | 07-26-00 | 8:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43467  | F   | 0 MG/KG/DAY | DISPOSITION     | 07-26-00 | 9:14  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43467  | F   | 0 MG/KG/DAY | BODY/INTEGUMENT | 05-23-00 | 7:43  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 05-30-00 | 9:35  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 06-06-00 | 7:47  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 06-13-00 | 9:36  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 06-20-00 | 9:39  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 06-27-00 | 9:04  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 07-04-00 | 11:45 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 07-11-00 | 9:37  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 07-18-00 | 8:15  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 07-25-00 | 12:44 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |             |                 | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43467  | F   | 0 MG/KG/DAY | SPECIAL II      | 05-02-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43474  | F   | 0 MG/KG/DAY | NORMAL          | 05-09-00 | 7:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 05-16-00 | 10:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 05-23-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 05-30-00 | 9:36  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 06-06-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 06-13-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 06-20-00 | 9:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 06-27-00 | 9:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-04-00 | 11:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-11-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-18-00 | 8:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-25-00 | 12:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-26-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                 | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY                  | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|-------------|---------------------------|----------|-------|-------|------------------------------------------------------------|
| 43474  | F   | 0 MG/KG/DAY | SPECIAL II                | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43483  | F   | 0 MG/KG/DAY | NORMAL                    | 05-02-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-09-00 | 7:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-16-00 | 10:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-23-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-30-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-06-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-13-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-20-00 | 9:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-27-00 | 9:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 07-04-00 | 11:46 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 07-18-00 | 8:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 07-25-00 | 12:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43483  | F   | 0 MG/KG/DAY | DISPOSITION BODY/INTEG II | 07-11-00 | 9:38  | P     | SCABBING END OF TAIL                                       |
| 43483  | F   | 0 MG/KG/DAY | SPECIAL II                | 07-27-00 | 10:24 | P     | SCABBING END OF TAIL                                       |
| 43483  | F   | 0 MG/KG/DAY | NORMAL                    | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY   |
| 43497  | F   | 0 MG/KG/DAY | NORMAL                    | 05-02-00 | 7:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-09-00 | 7:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-16-00 | 10:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-23-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 05-30-00 | 9:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-06-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-13-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-20-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 06-27-00 | 9:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |                           | 07-04-00 | 11:47 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP       | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|-------------|-------------|----------|-------|-------|------------------------------------------------------------|
| 43497  | F   | 0 MG/KG/DAY | NORMAL      | 07-11-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-18-00 | 8:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-25-00 | 12:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-28-00 | 11:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-28-00 | 11:22 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |             |             | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |             |             | 05-09-00 | 7:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-16-00 | 7:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-16-00 | 10:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-23-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-30-00 | 9:38  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-06-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-13-00 | 9:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-20-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 06-27-00 | 9:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-04-00 | 11:49 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-11-00 | 9:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-18-00 | 8:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-25-00 | 12:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 07-28-00 | 11:18 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |             |             | 07-28-00 | 11:18 | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |             |             | 07-28-00 | 0:00  | P     | NECROPSY                                                   |
| 43501  | F   | 0 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             | SPECIAL II  | 05-09-00 | 7:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-16-00 | 10:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-23-00 | 8:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |             |             | 05-30-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|----------|----------|-------|-------|--------------------------------------|
| 43400  | F   | 100 MG/KG/DAY | NORMAL   | 06-05-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 10:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 11:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-01-00 | 14:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-08-00 | 14:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-15-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-22-00 | 8:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 7:48  | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |          | 05-02-00 | 7:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-09-00 | 7:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-16-00 | 10:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-23-00 | 8:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 05-30-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-06-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-13-00 | 10:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-20-00 | 10:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 06-27-00 | 9:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-04-00 | 11:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-11-00 | 9:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-18-00 | 8:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 07-25-00 | 12:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |          | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |          | 08-01-00 | 14:05 | P     | DRIED RED MATERIAL AROUND RIGHT EYE  |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|---------------|----------------|----------|-------|-------|---------------------------------------|
| 43407  | F   | 100 MG/KG/DAY | EYES/EARS/NOSE | 08-01-00 | 14:05 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |                | 08-01-00 | 14:05 | P     | RED DISCHARGE RIGHT EYE               |
|        |     |               |                | 08-01-00 | 14:05 | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |                | 08-01-00 | 14:05 | P     | DRIED RED MATERIAL AROUND NOSE        |
|        |     |               |                | 08-01-00 | 14:05 | P     | DRIED RED MATERIAL FACIAL AREA        |
|        |     |               |                | 08-08-00 | 14:01 | P     | DRIED RED MATERIAL AROUND RIGHT EYE   |
|        |     |               |                | 08-08-00 | 14:01 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |                | 08-15-00 | 13:17 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |                | 08-15-00 | 13:17 | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |                | 08-22-00 | 8:52  | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |                | 08-22-00 | 8:52  | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |                | 08-23-00 | 7:49  | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |                | 08-01-00 | 14:04 | P     | UPPER INCISOR(S) MALIGNED             |
|        |     |               |                | 08-01-00 | 14:04 | P     | LOWER INCISOR(S) LONG, TRIMMED        |
|        |     |               |                | 08-08-00 | 14:01 | P     | LOWER INCISOR(S) LONG, TRIMMED        |
|        |     |               |                | 08-16-00 | 7:54  | P     | LOWER INCISOR(S) LONG, TRIMMED        |
|        |     |               |                | 08-22-00 | 8:52  | P     | UPPER INCISOR(S) MALIGNED             |
|        |     |               |                | 08-23-00 | 7:49  | P     | UPPER INCISOR(S) MALIGNED             |
|        |     |               |                | 08-01-00 | 14:05 | P     | DRIED RED MATERIAL FORELIMB(S)        |
|        |     |               |                | 08-08-00 | 14:02 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |                | 05-02-00 | 7:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 05-09-00 | 7:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 05-16-00 | 10:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 05-23-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 05-30-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 06-06-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 06-13-00 | 10:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 06-20-00 | 10:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |
|        |     |               |                | 06-27-00 | 9:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS  |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY                    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-----------------------------|----------|-------|-------|--------------------------------------|
| 43413  | F   | 100 MG/KG/DAY | NORMAL                      | 07-04-00 | 12:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 07-11-00 | 9:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 07-18-00 | 8:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 07-25-00 | 12:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-01-00 | 14:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-08-00 | 14:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-15-00 | 13:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-22-00 | 7:37  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-23-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|        |     |               |                             | 05-02-00 | 7:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 05-09-00 | 7:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 05-16-00 | 10:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 05-23-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 05-30-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 06-06-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 06-13-00 | 10:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 06-20-00 | 10:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 06-27-00 | 9:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 07-11-00 | 9:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 07-25-00 | 12:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-08-00 | 14:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-15-00 | 13:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-22-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |                             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43416  | F   | 100 MG/KG/DAY | DISPOSITION BODY/INTEGUMENT | 08-04-00 | 12:00 | P     | HAIR LOSS HINDLIMB (S)               |
| 43416  | F   | 100 MG/KG/DAY |                             | 07-18-00 | 8:28  | P     | HAIR LOSS HINDLIMB (S)               |
|        |     |               |                             | 08-01-00 | 14:07 | P     | HAIR LOSS HINDLIMB (S)               |
|        |     |               |                             | 08-23-00 | 7:45  | P     | HAIR LOSS HINDLIMB (S)               |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL SEX            | GROUP  | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|-----------------------|--------|----------|----------|-------|-------|--------------------------------------|
| 43419 F 100 MG/KG/DAY | NORMAL |          | 05-02-00 | 7:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-09-00 | 7:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-16-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-23-00 | 8:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-30-00 | 9:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-06-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-13-00 | 10:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-20-00 | 10:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-27-00 | 9:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 07-04-00 | 12:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 07-11-00 | 9:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 07-18-00 | 8:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 07-25-00 | 12:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-01-00 | 14:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-08-00 | 14:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-15-00 | 13:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-22-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-23-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
|                       |        |          | 05-02-00 | 7:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-09-00 | 7:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-16-00 | 10:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-23-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 05-30-00 | 9:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-06-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-13-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-20-00 | 10:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 06-27-00 | 9:13  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|                       |        |          | 07-04-00 | 12:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|---------------|----------|----------|-------|-------|------------------------------------------------------------|
| 43420  | F   | 100 MG/KG/DAY | NORMAL   | 07-11-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-18-00 | 8:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-25-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-26-00 | 8:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-26-00 | 9:16  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |               |          | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |               |          | 05-09-00 | 7:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-16-00 | 10:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-23-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-30-00 | 9:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-06-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-13-00 | 10:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-20-00 | 10:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-27-00 | 9:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-04-00 | 12:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-11-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-18-00 | 8:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-25-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-28-00 | 11:21 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |               |          | 07-28-00 | 11:21 | P     | ESTROUS SMEAR DETERMINED TO METESTROUS PRIOR TO NECROPSY   |
|        |     |               |          | 05-02-00 | 7:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-09-00 | 7:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-16-00 | 10:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-23-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-30-00 | 9:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBGD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                                                  |
|--------|-----|---------------|-------------|----------|-------|-------|-----------------------------------------------------------------------------------------------|
| 43458  | F   | 100 MG/KG/DAY | NORMAL      |          |       |       |                                                                                               |
|        |     |               |             | 06-06-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-13-00 | 10:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-20-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-27-00 | 9:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-04-00 | 12:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-11-00 | 9:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-18-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-25-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-27-00 | 10:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)<br>ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO<br>NECROPSY |
| 43458  | F   | 100 MG/KG/DAY | SPECIAL II  |          |       |       |                                                                                               |
| 43458  | F   | 100 MG/KG/DAY | SPECIAL II  |          |       |       |                                                                                               |
| 43462  | F   | 100 MG/KG/DAY | NORMAL      |          |       |       |                                                                                               |
|        |     |               |             | 05-02-00 | 7:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 05-09-00 | 7:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 05-16-00 | 10:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 05-23-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 05-30-00 | 9:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-06-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-13-00 | 10:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-20-00 | 10:06 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 06-27-00 | 9:14  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-04-00 | 12:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-11-00 | 9:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-18-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-25-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |               |             | 07-26-00 | 8:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
| 43462  | F   | 100 MG/KG/DAY | DISPOSITION |          |       |       |                                                                                               |
| 43462  | F   | 100 MG/KG/DAY | SPECIAL II  |          |       |       |                                                                                               |
| 43468  | F   | 100 MG/KG/DAY | NORMAL      |          |       |       |                                                                                               |
|        |     |               |             | 05-02-00 | 7:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBcD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY               | DATE     | TIME  | GRADE | OBSERVATIONS                                                |
|--------|-----|---------------|------------------------|----------|-------|-------|-------------------------------------------------------------|
| 43468  | F   | 100 MG/KG/DAY | NORMAL                 | 05-09-00 | 7:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 05-16-00 | 10:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 05-23-00 | 8:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 05-30-00 | 9:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-06-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-13-00 | 10:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-20-00 | 10:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-27-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-04-00 | 12:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-11-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-18-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-25-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-27-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)                              |
|        |     |               |                        | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO NECROPSY |
| 43468  | F   | 100 MG/KG/DAY | DISPOSITION SPECIAL II | 05-02-00 | 7:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43468  | F   | 100 MG/KG/DAY | NORMAL                 | 05-09-00 | 7:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43486  | F   | 100 MG/KG/DAY | NORMAL                 | 05-16-00 | 10:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 05-23-00 | 8:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 05-30-00 | 9:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-06-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-13-00 | 10:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-20-00 | 10:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 06-27-00 | 9:15  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-04-00 | 12:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-11-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-18-00 | 9:17  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |                        | 07-25-00 | 12:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                                                   |
|--------|-----|---------------|-----------------|----------|-------|-------|----------------------------------------------------------------|
| 43486  | F   | 100 MG/KG/DAY | NORMAL          | 07-27-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                           |
| 43486  | F   | 100 MG/KG/DAY | DISPOSITION     | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)                                 |
| 43486  | F   | 100 MG/KG/DAY | SPECIAL II      | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO<br>NECROPSY |
| 43489  | F   | 100 MG/KG/DAY | NORMAL          | 05-02-00 | 7:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                           |
| 43489  | F   | 100 MG/KG/DAY | DISPOSITION     | 07-27-00 | 12:58 | P     | PRIMARY NECROPSY (INTERVAL 13)                                 |
| 43489  | F   | 100 MG/KG/DAY | BODY/INTEGUMENT | 05-09-00 | 7:28  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-16-00 | 10:57 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-23-00 | 8:49  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-30-00 | 9:57  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-06-00 | 7:58  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-13-00 | 10:18 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-20-00 | 10:10 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-27-00 | 9:15  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 07-04-00 | 12:06 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 07-11-00 | 10:00 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 07-18-00 | 9:18  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 07-25-00 | 12:54 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 07-27-00 | 10:19 | P     | HAIR LOSS FORELIMB (S)                                         |
| 43489  | F   | 100 MG/KG/DAY | SPECIAL II      | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO<br>NECROPSY |
| 43502  | F   | 100 MG/KG/DAY | NORMAL          | 05-02-00 | 7:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                           |
| 43502  | F   | 100 MG/KG/DAY | DISPOSITION     | 07-28-00 | 11:10 | P     | PRIMARY NECROPSY (INTERVAL 13)                                 |
| 43502  | F   | 100 MG/KG/DAY | BODY/INTEGUMENT | 05-09-00 | 7:29  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-16-00 | 10:59 | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-23-00 | 8:49  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 05-30-00 | 9:58  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-06-00 | 7:59  | P     | HAIR LOSS FORELIMB (S)                                         |
|        |     |               |                 | 06-13-00 | 10:20 | P     | HAIR LOSS FORELIMB (S)                                         |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY        | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|---------------|-----------------|----------|-------|-------|------------------------------------------------------------|
| 43502  | F   | 100 MG/KG/DAY | BODY/INTEGUMENT | 06-13-00 | 10:21 | P     | HAIR LOSS HINDLIMB (S)                                     |
|        |     |               |                 | 06-20-00 | 10:11 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 06-27-00 | 9:16  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 07-04-00 | 12:07 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 07-11-00 | 10:01 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 07-18-00 | 9:18  | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 07-25-00 | 12:54 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 07-28-00 | 11:09 | P     | HAIR LOSS FORELIMB (S)                                     |
|        |     |               |                 | 06-20-00 | 10:11 | P     | SCABBING FORELIMB (S)                                      |
|        |     |               |                 | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY   |
| 43511  | F   | 100 MG/KG/DAY | NORMAL          | 05-02-00 | 7:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 05-09-00 | 7:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 05-16-00 | 11:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 05-23-00 | 8:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 05-30-00 | 9:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 06-06-00 | 7:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 06-13-00 | 10:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 06-20-00 | 10:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 06-27-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 07-04-00 | 12:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 07-11-00 | 10:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 07-18-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 07-25-00 | 12:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                 | 07-28-00 | 11:05 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43511  | F   | 100 MG/KG/DAY | DISPOSITION     | 07-28-00 | 11:05 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43511  | F   | 100 MG/KG/DAY | SPECIAL II      | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43515  | F   | 100 MG/KG/DAY | NORMAL          | 05-02-00 | 7:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO. : WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HB2D IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                                                |
|--------|-----|---------------|----------|----------|-------|-------|-------------------------------------------------------------|
| 43515  | F   | 100 MG/KG/DAY | NORMAL   | 05-09-00 | 7:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-16-00 | 11:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-23-00 | 8:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-30-00 | 9:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-06-00 | 7:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-13-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-20-00 | 10:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-27-00 | 9:16  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-04-00 | 12:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-11-00 | 10:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-18-00 | 9:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-25-00 | 12:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-26-00 | 8:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-26-00 | 9:15  | P     | PRIMARY NECROPSY (INTERVAL 13)                              |
|        |     |               |          | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO NECROPSY |
|        |     |               |          | 05-02-00 | 7:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-09-00 | 7:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-16-00 | 11:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-23-00 | 9:04  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 05-30-00 | 10:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-06-00 | 8:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-13-00 | 12:07 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-20-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 06-27-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-04-00 | 12:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 07-11-00 | 13:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 08-08-00 | 14:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |          | 08-15-00 | 13:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WII-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                             |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------------------------------------------|
| 43402  | F   | 300 MG/KG/DAY | NORMAL      | 08-22-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43402  | F   | 300 MG/KG/DAY | DISPOSITION | 08-23-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
| 43402  | F   | 300 MG/KG/DAY | SPECIAL II  | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)                                          |
|        |     |               |             | 07-13-00 | 13:04 | P     | 3MM X 3MM X 2MM FIRM REDDENED IMMOVEABLE MASS RIGHT SIDE OF MOUTH ON LIP |
|        |     |               |             | 07-13-00 | 13:04 | P     | 2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS LEFT SIDE OF MOUTH ON LIP  |
|        |     |               |             | 07-18-00 | 9:28  | P     | 2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS ON                         |
|        |     |               |             | 07-25-00 | 13:00 | P     | RIGHT SIDE OF MOUTH ON LIP                                               |
|        |     |               |             | 08-01-00 | 14:11 | P     | 2MM X 2MM X 1MM FIRM REDDENED IMMOVEABLE MASS ON                         |
|        |     |               |             | 05-02-00 | 7:39  | P     | RIGHT SIDE OF MOUTH ON LIP                                               |
|        |     |               |             | 05-09-00 | 7:39  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 05-16-00 | 11:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 05-23-00 | 9:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 05-30-00 | 10:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 06-06-00 | 8:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 06-13-00 | 12:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 06-20-00 | 10:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 06-27-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 07-04-00 | 12:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 07-11-00 | 13:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 07-18-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 07-25-00 | 13:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 08-01-00 | 14:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 08-08-00 | 14:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |
|        |     |               |             | 08-15-00 | 13:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY      | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|---------------|----------|-------|-------|--------------------------------------|
| 43426  | F   | 300 MG/KG/DAY | NORMAL        | 08-22-00 | 8:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-23-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43426  | F   | 300 MG/KG/DAY | DISPOSITION   | 08-23-00 | 11:21 | P     | RECOVERY NECROSY (INTERVAL 17)       |
| 43442  | F   | 300 MG/KG/DAY | NORMAL        | 05-02-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-09-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-16-00 | 11:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-23-00 | 9:05  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-30-00 | 10:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-06-00 | 8:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-13-00 | 12:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-20-00 | 10:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-27-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 07-04-00 | 12:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 07-11-00 | 13:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 07-18-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 07-25-00 | 13:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-01-00 | 14:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-08-00 | 14:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-15-00 | 13:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-23-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43442  | F   | 300 MG/KG/DAY | DISPOSITION   | 08-22-00 | 8:56  | P     | SCABBING FORELIMB(S)                 |
| 43442  | F   | 300 MG/KG/DAY | BODY/INTEG II | 08-22-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43446  | F   | 300 MG/KG/DAY | NORMAL        | 05-02-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-09-00 | 11:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-16-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 05-23-00 | 10:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-06-00 | 8:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |               | 06-13-00 | 12:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|---------------|-------------|----------|-------|-------|--------------------------------------|
| 43446  | F   | 300 MG/KG/DAY | NORMAL      | 06-20-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 12:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 13:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 13:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 14:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 7:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43446  | F   | 300 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:40  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43461  | F   | 300 MG/KG/DAY | NORMAL      | 05-09-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-16-00 | 11:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-23-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 05-30-00 | 10:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-06-00 | 8:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-13-00 | 12:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-20-00 | 10:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 06-27-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-04-00 | 12:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-11-00 | 13:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-18-00 | 9:30  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 07-25-00 | 13:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-01-00 | 14:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-08-00 | 14:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-15-00 | 13:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |               |             | 08-22-00 | 7:49  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                |
|--------|-----|---------------|-------------|----------|-------|-------|-------------------------------------------------------------|
| 43461  | F   | 300 MG/KG/DAY | NORMAL      | 08-23-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43461  | F   | 300 MG/KG/DAY | DISPOSITION | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)                             |
| 43463  | F   | 300 MG/KG/DAY | NORMAL      | 05-12-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-09-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-16-00 | 11:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-23-00 | 9:06  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-30-00 | 10:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-06-00 | 8:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-13-00 | 12:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-20-00 | 10:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-27-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-04-00 | 12:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-11-00 | 13:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-18-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-25-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-26-00 | 8:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-26-00 | 9:26  | P     | PRIMARY NECROPSY (INTERVAL 13)                              |
|        |     |               |             | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO NECROPSY |
| 43463  | F   | 300 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43463  | F   | 300 MG/KG/DAY | SPECIAL II  | 05-09-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-16-00 | 11:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-23-00 | 9:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 05-30-00 | 10:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-06-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-13-00 | 12:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-20-00 | 10:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 06-27-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |               |             | 07-04-00 | 12:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA - BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|---------------|-------------|----------|-------|-------|------------------------------------------------------------|
| 43475  | F   | 300 MG/KG/DAY | NORMAL      | 07-11-00 | 13:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-18-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-25-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-26-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-26-00 | 9:15  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |               |             | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43478  | F   | 300 MG/KG/DAY | NORMAL      | 05-02-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-09-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-16-00 | 11:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-23-00 | 9:07  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-30-00 | 10:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 06-06-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 06-13-00 | 12:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 06-20-00 | 10:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 06-27-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-04-00 | 12:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-11-00 | 13:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-18-00 | 9:31  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-25-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-27-00 | 10:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 07-27-00 | 13:00 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43478  | F   | 300 MG/KG/DAY | DISPOSITION | 07-27-00 | 0:00  | P     | SILIDE UNAVAILABLE; UNABLE TO DETERMINE ESTROUS STAGE      |
|        |     |               | SPECIAL II  |          |       |       |                                                            |
| 43491  | F   | 300 MG/KG/DAY | NORMAL      | 05-02-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-09-00 | 7:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-16-00 | 11:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-23-00 | 9:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 05-30-00 | 10:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |             | 06-06-00 | 8:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO. :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|---------------|----------|----------|-------|-------|------------------------------------------------------------|
| 43491  | F   | 300 MG/KG/DAY | NORMAL   | 06-13-00 | 12:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-20-00 | 10:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-27-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-04-00 | 12:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-11-00 | 13:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-18-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-25-00 | 13:02 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-26-00 | 8:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |               |          | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO NECROPSY   |
|        |     |               |          | 05-02-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-09-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-16-00 | 11:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-23-00 | 9:08  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 05-30-00 | 10:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-06-00 | 8:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-13-00 | 12:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-20-00 | 10:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 06-27-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-04-00 | 12:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-11-00 | 13:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-18-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-25-00 | 13:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |          | 07-28-00 | 11:23 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA                      |
|        |     |               |          | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |               |          | 05-02-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                                    |
|--------|-----|---------------|----------------|----------|-------|-------|-------------------------------------------------|
| 43496  | F   | 300 MG/KG/DAY | NORMAL         | 05-09-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-16-00 | 11:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-23-00 | 9:09  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-30-00 | 10:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-06-00 | 8:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-13-00 | 12:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-20-00 | 10:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-27-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 07-04-00 | 12:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 07-28-00 | 11:09 | P     | PRIMARY NECROPSY (INTERVAL 13)                  |
| 43496  | F   | 300 MG/KG/DAY | DISPOSITION    | 07-11-00 | 13:26 | P     | HAIR LOSS FORELIMB (S)                          |
| 43496  | F   | 300 MG/KG/DAY | BODY/INTEGMENT | 07-18-00 | 9:33  | P     | HAIR LOSS FORELIMB (S)                          |
|        |     |               |                | 07-25-00 | 13:03 | P     | HAIR LOSS FORELIMB (S)                          |
|        |     |               |                | 07-28-00 | 11:08 | P     | HAIR LOSS FORELIMB (S)                          |
|        |     |               |                | 07-28-00 | 11:08 | P     | DRIED RED MATERIAL AROUND NOSE                  |
| 43496  | F   | 300 MG/KG/DAY | EYES/EARS/NOSE | 07-28-00 | 11:08 | P     | SCABBING END OF TAIL                            |
| 43496  | F   | 300 MG/KG/DAY | BODY/INTEG II  | 07-28-00 | 11:08 | P     | END OF TAIL MISSING                             |
| 43496  | F   | 300 MG/KG/DAY | SPECIAL II     | 07-28-00 | 11:08 | P     | ESTROUS SMEAR DETERMINED TO METESTRous PRIOR TO |
|        |     |               |                | 07-28-00 | 0:00  | P     | NECROPSY                                        |
| 43508  | F   | 300 MG/KG/DAY | NORMAL         | 05-02-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-09-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-16-00 | 11:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-23-00 | 9:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 05-30-00 | 10:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-06-00 | 8:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-13-00 | 12:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-20-00 | 10:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 06-27-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |
|        |     |               |                | 07-04-00 | 12:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS            |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
 SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HB-CD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY                     | DATE     | TIME  | GRADE | OBSERVATIONS                                                     |
|--------|-----|---------------|------------------------------|----------|-------|-------|------------------------------------------------------------------|
| 43508  | F   | 300 MG/KG/DAY | NORMAL                       | 07-11-00 | 13:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-18-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-27-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
| 43508  | F   | 300 MG/KG/DAY | DISPOSITION<br>EYES/EAR/NOSE | 07-27-00 | 12:59 | P     | PRIMARY NECROPSY (INTERVAL 13)<br>DRIED RED MATERIAL AROUND NOSE |
| 43508  | F   | 300 MG/KG/DAY | SPECIAL II                   | 07-25-00 | 13:03 | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO<br>NECROPSY   |
| 43513  | F   | 300 MG/KG/DAY | NORMAL                       | 05-02-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-03-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-16-00 | 11:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-23-00 | 9:10  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-30-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 06-06-00 | 8:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 06-13-00 | 12:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 06-20-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 06-27-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-04-00 | 12:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-11-00 | 13:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-18-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-25-00 | 13:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 07-27-00 | 10:19 | P     | PRIMARY NECROPSY (INTERVAL 13)                                   |
| 43513  | F   | 300 MG/KG/DAY | DISPOSITION<br>SPECIAL II    | 07-27-00 | 12:58 | P     | ESTROUS SMEAR DETERMINED TO BE DILESTROUS PRIOR TO<br>NECROPSY   |
| 43513  | F   | 300 MG/KG/DAY | NORMAL                       | 05-02-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-09-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-16-00 | 11:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-23-00 | 9:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |
|        |     |               |                              | 05-30-00 | 10:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                             |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP         | CATEGORY               | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|---------------|------------------------|----------|-------|-------|------------------------------------------------------------|
| 43516  | F   | 300 MG/KG/DAY | NORMAL                 | 06-06-00 | 8:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-13-00 | 12:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-20-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-27-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-04-00 | 12:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-11-00 | 13:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-18-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-25-00 | 13:03 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-28-00 | 11:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-28-00 | 11:09 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |               |                        | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43516  | F   | 300 MG/KG/DAY | DISPOSITION SPECIAL II | 05-02-00 | 7:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43516  | F   | 300 MG/KG/DAY | DISPOSITION SPECIAL II | 05-09-00 | 7:45  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43517  | F   | 300 MG/KG/DAY | NORMAL                 | 05-16-00 | 11:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43517  | F   | 300 MG/KG/DAY | NORMAL                 | 05-23-00 | 9:11  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 05-30-00 | 10:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-06-00 | 8:12  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-13-00 | 12:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-20-00 | 10:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 06-27-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-04-00 | 12:25 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-11-00 | 13:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-18-00 | 9:35  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |               |                        | 07-25-00 | 13:05 | P     | SWOLLEN RIGHT EAR                                          |
|        |     |               |                        | 07-27-00 | 10:18 | P     | REDDENED RIGHT EAR                                         |
|        |     |               |                        | 07-27-00 | 10:18 | P     | REDDENED RIGHT EAR                                         |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY   | DATE     | TIME  | GRADE | OBSERVATIONS                                             |
|--------|-----|----------------|------------|----------|-------|-------|----------------------------------------------------------|
| 43517  | F   | 300 MG/KG/DAY  | SPECIAL II | 05-02-00 | 7:51  | P     | ESTROUS SMEAR DETERMINED TO METESTRous PRIOR TO NECROPSY |
| 43401  | F   | 1000 MG/KG/DAY | NORMAL     | 05-09-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-16-00 | 13:08 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-23-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-30-00 | 10:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-06-00 | 8:18  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-13-00 | 12:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-20-00 | 10:54 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-27-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 07-04-00 | 12:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 07-11-00 | 13:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 07-18-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 07-25-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-01-00 | 14:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-08-00 | 14:17 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-15-00 | 13:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-22-00 | 8:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-29-00 | 7:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)                          |
|        |     |                |            | 05-02-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-09-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-16-00 | 13:09 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-23-00 | 9:22  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 05-30-00 | 10:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-06-00 | 8:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-13-00 | 12:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |            | 06-20-00 | 10:55 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|----------------|-------------|----------|-------|-------|--------------------------------------|
| 43410  | F   | 1000 MG/KG/DAY | NORMAL      | 06-27-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-01-00 | 14:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-08-00 | 14:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-15-00 | 13:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-22-00 | 8:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-23-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43421  | F   | 1000 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-09-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-16-00 | 13:10 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-23-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 05-30-00 | 10:33 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-06-00 | 8:19  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-13-00 | 12:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-20-00 | 10:56 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 06-27-00 | 9:32  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-04-00 | 12:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-11-00 | 13:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-18-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 07-25-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-01-00 | 14:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-08-00 | 14:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-15-00 | 13:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-22-00 | 7:41  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |             | 08-23-00 | 7:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY | DISPOSITION | DATE     | TIME  | GRADE | OBSERVATIONS                         |
|--------|-----|----------------|----------|-------------|----------|-------|-------|--------------------------------------|
| 43421  | F   | 1000 MG/KG/DAY | NORMAL   |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43429  | F   | 1000 MG/KG/DAY | NORMAL   |             | 05-02-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-09-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-16-00 | 13:11 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-23-00 | 9:23  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-30-00 | 10:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-06-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-13-00 | 12:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-20-00 | 10:57 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-27-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 07-04-00 | 12:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 07-11-00 | 13:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 07-18-00 | 9:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 07-25-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-01-00 | 14:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-08-00 | 14:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-15-00 | 13:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-22-00 | 7:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-23-00 | 7:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)      |
| 43429  | F   | 1000 MG/KG/DAY | NORMAL   |             | 05-02-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
| 43430  | F   | 1000 MG/KG/DAY | NORMAL   |             | 05-09-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-16-00 | 13:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-23-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 05-30-00 | 10:34 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-06-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-13-00 | 12:28 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-20-00 | 10:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |
|        |     |                |          |             | 06-27-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                |
|--------|-----|----------------|-------------|----------|-------|-------|-------------------------------------------------------------|
| 43430  | F   | 1000 MG/KG/DAY | NORMAL      | 07-04-00 | 12:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-11-00 | 13:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-18-00 | 9:46  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-25-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-01-00 | 14:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-08-00 | 14:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-15-00 | 13:29 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-22-00 | 7:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-23-00 | 7:54  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 08-23-00 | 11:21 | P     | RECOVERY NECROPSY (INTERVAL 17)                             |
| 43430  | F   | 1000 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43440  | F   | 1000 MG/KG/DAY | NORMAL      | 05-09-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 05-16-00 | 13:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 05-23-00 | 9:24  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 05-30-00 | 10:35 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 06-06-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 06-13-00 | 12:30 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 06-20-00 | 10:58 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 06-27-00 | 9:33  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-04-00 | 12:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-11-00 | 13:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-18-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-25-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-27-00 | 10:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
|        |     |                |             | 07-27-00 | 12:58 | P     | PRIMARY NECROPSY (INTERVAL 13)                              |
|        |     |                |             |          | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIAESTROUS PRIOR TO NECROPSY |
| 43440  | F   | 1000 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43440  | F   | 1000 MG/KG/DAY | SPECIAL II  | 05-09-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                        |
| 43456  | F   | 1000 MG/KG/DAY | NORMAL      |          |       |       |                                                             |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|----------------|-------------|----------|-------|-------|------------------------------------------------------------|
| 43456  | F   | 1000 MG/KG/DAY | NORMAL      | 05-16-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 05-23-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 05-30-00 | 10:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-06-00 | 8:20  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-13-00 | 12:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-20-00 | 10:59 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-27-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-04-00 | 12:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-11-00 | 13:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-18-00 | 9:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-25-00 | 13:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-28-00 | 11:20 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43456  | F   | 1000 MG/KG/DAY | DISPOSITION | 07-28-00 | 11:20 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
| 43456  | F   | 1000 MG/KG/DAY | SPECIAL II  | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43460  | F   | 1000 MG/KG/DAY | NORMAL      | 05-02-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 05-09-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 05-23-00 | 9:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 05-30-00 | 10:36 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-06-00 | 8:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-13-00 | 12:31 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-20-00 | 11:00 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 06-27-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-04-00 | 12:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-11-00 | 13:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-18-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-25-00 | 13:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-27-00 | 10:27 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |             | 07-27-00 | 13:01 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|----------------|----------------|----------|-------|-------|------------------------------------------------------------|
| 43460  | F   | 1000 MG/KG/DAY | EXCRETA        | 05-16-00 | 13:17 | P     | WET YELLOW MATERIAL UROGENITAL AREA                        |
| 43460  | F   | 1000 MG/KG/DAY | SPECIAL II     | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43466  | F   | 1000 MG/KG/DAY | NORMAL         | 05-02-00 | 7:53  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 05-09-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 05-16-00 | 13:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 05-23-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 05-30-00 | 10:37 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 06-06-00 | 8:21  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 06-13-00 | 12:32 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 06-20-00 | 11:01 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 06-27-00 | 9:34  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-04-00 | 12:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-11-00 | 13:45 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-18-00 | 9:48  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-25-00 | 13:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-26-00 | 8:47  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-26-00 | 9:17  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |                |                | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
| 43466  | F   | 1000 MG/KG/DAY | DISPOSITION    | 05-09-00 | 7:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43466  | F   | 1000 MG/KG/DAY | SPECIAL II     | 05-16-00 | 13:19 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43477  | F   | 1000 MG/KG/DAY | BODY/INTEGMENT | 05-23-00 | 9:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
| 43477  | F   | 1000 MG/KG/DAY | BODY/INTEGMENT | 05-30-00 | 10:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |                | 07-28-00 | 11:15 | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |                |                | 07-28-00 | 13:15 | P     | HAIR LOSS FORELIMB (S)                                     |
| 43477  | F   | 1000 MG/KG/DAY | EXCRETA        | 07-18-00 | 11:15 | P     | HAIR LOSS FORELIMB (S)                                     |
| 43477  | F   | 1000 MG/KG/DAY | BODY/INTEG II  | 07-18-00 | 9:49  | P     | WET YELLOW MATERIAL UROGENITAL AREA                        |
|        |     |                |                | 06-06-00 | 8:23  | P     | SCABBING FORELIMB (S)                                      |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
 SPONSOR : CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
 A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
 INDIVIDUAL CLINICAL OBSERVATIONS  
 TABLE RANGE : 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY              | DATE     | TIME  | GRADE | OBSERVATIONS                                                                    |
|--------|-----|----------------|-----------------------|----------|-------|-------|---------------------------------------------------------------------------------|
| 43477  | F   | 1000 MG/KG/DAY | BODY / INTEG II       | 06-27-00 | 9:36  | P     | SCABBING FORELIMB (S)                                                           |
|        |     |                |                       | 07-04-00 | 12:41 | P     | SCABBING FORELIMB (S)                                                           |
|        |     |                |                       | 07-11-00 | 13:47 | P     | SCABBING FORELIMB (S)                                                           |
|        |     |                |                       | 07-25-00 | 13:15 | P     | SCABBING FORELIMB (S)                                                           |
|        |     |                |                       | 07-28-00 | 11:11 | P     | SCABBING FORELIMB (S)                                                           |
| 43477  | F   | 1000 MG/KG/DAY | ORAL/DENTAL SPECIAL I | 05-02-00 | 7:54  | P     | UPPER INCISOR (S) MALIGNED                                                      |
|        |     |                |                       | 07-28-00 | 11:11 | P     | WET YELLOW MATERIAL ANOGENITAL AREA                                             |
|        |     |                |                       | 07-28-00 | 11:11 | P     | WET BROWN MATERIAL ANOGENITAL AREA                                              |
| 43477  | F   | 1000 MG/KG/DAY | SPECIAL II            | 07-28-00 | 11:14 | P     | WET RED MATERIAL FORELIMB (S)                                                   |
|        |     |                |                       | 06-06-00 | 8:24  | P     | 1.5MM X 10MM X 5 MM FIRM, MOVABLE MASS LEFT FORELIMB                            |
|        |     |                |                       | 06-13-00 | 12:44 | P     | 5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 06-13-00 | 12:46 | P     | 5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING MASS LEFT FORELIMB                      |
|        |     |                |                       | 06-13-00 | 12:48 | P     | 7MM X 7MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 06-13-00 | 12:50 | P     | 10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB                             |
|        |     |                |                       | 06-20-00 | 11:07 | P     | 5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 06-20-00 | 11:09 | P     | 5MM X 5MM X 3MM FIRM, MOVABLE, SCABBING MASS LEFT FORELIMB                      |
|        |     |                |                       | 06-20-00 | 11:11 | P     | 7MM X 7MM X 3MM FIRM, MOVABLE, RUPTURED, PURULENT DISCHARGE, MASS LEFT FORELIMB |
|        |     |                |                       | 06-20-00 | 11:11 | P     | 10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB                             |
|        |     |                |                       | 06-27-00 | 9:40  | P     | 5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 06-27-00 | 9:41  | P     | 10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB                             |
|        |     |                |                       | 06-27-00 | 9:42  | P     | 3MM X 3MM X 3MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 07-04-00 | 12:41 | P     | 5MM X 5MM X 5MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 07-04-00 | 12:41 | P     | 10MM X 10MM X 10MM FIRM, MOVABLE MASS LEFT FORELIMB                             |
|        |     |                |                       | 07-04-00 | 12:41 | P     | 3MM X 3MM X 3MM FIRM, MOVABLE MASS LEFT FORELIMB                                |
|        |     |                |                       | 07-11-00 | 13:47 | P     | 15MM X 10MM X 5 MM FIRM, MOVABLE MASS LEFT FORELIMB                             |
|        |     |                |                       | 07-18-00 | 9:49  | P     | 15MM X 10MM X 5 MM FIRM, MOVABLE MASS LEFT FORELIMB                             |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                                                                                  |
|--------|-----|----------------|----------------|----------|-------|-------|-----------------------------------------------------------------------------------------------|
| 43477  | F   | 1000 MG/KG/DAY | SPECIAL II     | 07-25-00 | 13:15 | P     | 1.5MM X 10MM X 5 MM FIRM, MOVABLE MASS LEFT FORELIMB                                          |
|        |     |                |                | 07-28-00 | 11:14 | P     | 3.0MM X 20MM X 10MM FIRM, IMMOVEABLE, RUPTURED,<br>RED DISCHARGE, SCABBING MASS LEFT FORELIMB |
|        |     |                |                | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTRous PRIOR TO<br>NECROPSY                                 |
| 43479  | F   | 1000 MG/KG/DAY | NORMAL         | 05-02-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-09-00 | 7:57  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-16-00 | 13:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-23-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-30-00 | 10:38 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-06-00 | 8:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-13-00 | 12:50 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-20-00 | 11:12 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-27-00 | 9:42  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-04-00 | 12:42 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-11-00 | 13:48 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-18-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-25-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-27-00 | 10:18 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 07-27-00 | 12:58 | P     | PRIMARY NECROPSY (INTERVAL 13)                                                                |
| 43479  | F   | 1000 MG/KG/DAY | DISPOSITION II | 07-27-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE ESTROUS PRIOR TO<br>NECROPSY                                   |
| 43479  | F   | 1000 MG/KG/DAY | SPECIAL II     | 07-27-00 | 12:58 | P     | PRESENT                                                                                       |
| 43481  | F   | 1000 MG/KG/DAY | NORMAL         | 05-02-00 | 7:55  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-09-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-16-00 | 13:22 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-23-00 | 9:27  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 05-30-00 | 10:39 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-06-00 | 8:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |
|        |     |                |                | 06-13-00 | 12:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                                                          |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90 DAY ORAL TOXICITY STUDY OF HBOD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY | DATE     | TIME  | GRADE | OBSERVATIONS                                               |
|--------|-----|----------------|----------|----------|-------|-------|------------------------------------------------------------|
| 43481  | F   | 1000 MG/KG/DAY | NORMAL   | 06-20-00 | 11:13 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 06-27-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-04-00 | 12:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-18-00 | 9:50  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-25-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-26-00 | 8:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-26-00 | 9:18  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |                |          | 07-11-00 | 13:49 | P     | WET CLEAR MATERIAL AROUND MOUTH                            |
|        |     |                |          | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |                |          | 05-02-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 05-09-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 05-16-00 | 13:23 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 05-23-00 | 9:28  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 05-30-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 06-06-00 | 8:25  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 06-13-00 | 12:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 06-20-00 | 11:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 06-27-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-04-00 | 12:43 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-11-00 | 13:50 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-18-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-25-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-26-00 | 8:44  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 07-26-00 | 9:15  | P     | PRIMARY NECROPSY (INTERVAL 13)                             |
|        |     |                |          | 07-26-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO NECROPSY |
|        |     |                |          | 05-02-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |
|        |     |                |          | 05-09-00 | 7:58  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                       |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO.: WIL-1186012  
SPONSOR: CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                             |
|--------|-----|----------------|-------------|----------|-------|-------|----------------------------------------------------------|
| 43492  | F   | 1000 MG/KG/DAY | NORMAL      | 05-16-00 | 13:24 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 05-23-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 05-30-00 | 10:40 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-06-00 | 8:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-13-00 | 12:52 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-20-00 | 11:14 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-27-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-04-00 | 12:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-11-00 | 13:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-18-00 | 9:51  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-25-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-28-00 | 11:21 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-28-00 | 11:21 | P     | PRIMARY NECROPSY (INTERVAL 13)                           |
|        |     |                |             | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO METESTRous PRIOR TO NECROPSY |
| 43492  | F   | 1000 MG/KG/DAY | DISPOSITION | 05-02-00 | 7:56  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
| 43492  | F   | 1000 MG/KG/DAY | SPECIAL II  | 05-09-00 | 7:59  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
| 43503  | F   | 1000 MG/KG/DAY | NORMAL      | 05-16-00 | 13:26 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 05-23-00 | 9:29  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 05-30-00 | 10:41 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-06-00 | 8:26  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-13-00 | 12:53 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-20-00 | 11:15 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 06-27-00 | 9:43  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-04-00 | 12:44 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-11-00 | 13:51 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-18-00 | 9:52  | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-25-00 | 13:16 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |
|        |     |                |             | 07-28-00 | 11:04 | P     | NO SIGNIFICANT CLINICAL OBSERVATIONS                     |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO :WIL-186012  
SPONSOR :CMA-BFRIP

DETAILED PHYSICAL EXAMINATIONS/DISPOSITIONS  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 08-23-00

| ANIMAL | SEX | GROUP          | CATEGORY    | DATE     | TIME  | GRADE | OBSERVATIONS                                                  |
|--------|-----|----------------|-------------|----------|-------|-------|---------------------------------------------------------------|
| 43503  | F   | 1000 MG/KG/DAY | DISPOSITION | 07-28-00 | 11:04 | P     | PRIMARY NECROPSY (INTERVAL 13)                                |
| 43503  | F   | 1000 MG/KG/DAY | SPECIAL II  | 07-28-00 | 0:00  | P     | ESTROUS SMEAR DETERMINED TO BE DIESTROUS PRIOR TO<br>NECROPSY |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PCRDv4.01  
11/30/2000  
R:07/18/2001

PROJECT NO.: WTL-186012  
SPONSOR: CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCC IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 07-27-00

| ANIMAL | SEX | GROUP          | CATEGORY         | DATE     | TIME  | GRADE | OBSERVATIONS                        |
|--------|-----|----------------|------------------|----------|-------|-------|-------------------------------------|
| 43316  | M   | 0 MG/KG/DAY    | SPECIAL I        | 07-13-00 | 12:40 | P     | WET YELLOW MATERIAL ANOGENITAL AREA |
| 43334  | M   | 0 MG/KG/DAY    | SPECIAL I        | 07-08-00 | 12:24 | P     | WET BROWN MATERIAL ANOGENITAL AREA  |
|        |     |                |                  | 07-13-00 | 12:40 | P     | WET YELLOW MATERIAL ANOGENITAL AREA |
| 43311  | M   | 100 MG/KG/DAY  | CARDIO-PULMONARY | 07-08-00 | 12:25 | P     | RALES                               |
| 43320  | M   | 100 MG/KG/DAY  | EXCRETA          | 05-28-00 | 11:39 | P     | WET YELLOW MATERIAL UROGENITAL AREA |
| 43340  | M   | 100 MG/KG/DAY  | EYES/EARS/NOSE   | 05-23-00 | 12:05 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 05-29-00 | 12:17 | P     | DRIED RED MATERIAL AROUND RIGHT EYE |
|        |     |                |                  | 05-30-00 | 13:50 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 05-31-00 | 14:34 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-01-00 | 12:29 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-02-00 | 12:04 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-03-00 | 12:19 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-04-00 | 12:43 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-09-00 | 12:40 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-10-00 | 11:36 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-10-00 | 11:36 | P     | CLEAR DISCHARGE LEFT EYE            |
|        |     |                |                  | 06-11-00 | 12:42 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-20-00 | 12:17 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 06-24-00 | 12:13 | P     | CLEAR DISCHARGE LEFT EYE            |
|        |     |                |                  | 07-01-00 | 12:05 | P     | DRIED RED MATERIAL AROUND LEFT EYE  |
|        |     |                |                  | 07-13-00 | 12:44 | P     | WET CLEAR MATERIAL AROUND MOUTH     |
| 43331  | M   | 300 MG/KG/DAY  | ORAL/DENTAL      | 05-16-00 | 12:27 | P     | RED DISCHARGE RIGHT EYE             |
| 43341  | M   | 300 MG/KG/DAY  | EYES/EARS/NOSE   | 07-13-00 | 12:44 | P     | WET CLEAR MATERIAL AROUND MOUTH     |
| 43361  | M   | 300 MG/KG/DAY  | ORAL/DENTAL      | 06-28-00 | 13:09 | P     | DRIED RED MATERIAL AROUND RIGHT EYE |
| 43385  | M   | 300 MG/KG/DAY  | EYES/EARS/NOSE   | 07-01-00 | 12:08 | P     | DRIED RED MATERIAL AROUND RIGHT EYE |
|        |     |                |                  | 07-11-00 | 13:59 | P     | DRIED RED MATERIAL AROUND RIGHT EYE |
| 43392  | M   | 300 MG/KG/DAY  | ORAL/DENTAL      | 07-11-00 | 13:59 | P     | WET CLEAR MATERIAL VENTRAL NECK     |
| 43278  | M   | 1000 MG/KG/DAY | BEHAVIOR/CNS     | 06-28-00 | 13:09 | P     | UNKEMPT APPEARANCE                  |
| 43278  | M   | 1000 MG/KG/DAY | EXCRETA          | 05-28-00 | 11:36 | P     | SOFT FECES                          |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

| ANIMAL | SEX | GROUP          | CATEGORY         | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|----------------|------------------|----------|-------|-------|---------------------------------------|
| 43278  | M   | 1000 MG/KG/DAY | EXCRETA          | 06-11-00 | 13:18 | P     | SOFT FECES                            |
| 43278  | M   | 1000 MG/KG/DAY | SPECIAL I        | 06-25-00 | 12:09 | P     | SOFT FECES                            |
| 43280  | M   | 1000 MG/KG/DAY | BEHAVIOR/CNS     | 05-28-00 | 11:36 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
| 43280  | M   | 1000 MG/KG/DAY | SPECIAL I        | 05-23-00 | 12:07 | P     | UNKEMPT APPEARANCE                    |
| 43280  | M   | 1000 MG/KG/DAY | BEHAVIOR/CNS     | 07-10-00 | 14:32 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
| 43281  | M   | 1000 MG/KG/DAY | CARDIO-PULMONARY | 05-29-00 | 12:20 | P     | UNKEMPT APPEARANCE                    |
| 43281  | M   | 1000 MG/KG/DAY | EXCRETA          | 07-10-00 | 14:32 | P     | RULES                                 |
| 43281  | M   | 1000 MG/KG/DAY | EXCRETA          | 05-18-00 | 11:37 | P     | SOFT FECES                            |
| 43281  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 07-11-00 | 14:01 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43281  | M   | 1000 MG/KG/DAY | SPECIAL I        | 05-11-00 | 12:10 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
| 43297  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 05-18-00 | 11:36 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
| 43328  | M   | 1000 MG/KG/DAY | EXCRETA          | 05-26-00 | 12:56 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
| 43328  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 06-21-00 | 12:10 | P     | WET BROWN MATERIAL ANOGENITAL AREA    |
| 43346  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 07-11-00 | 14:01 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
| 43359  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 05-27-00 | 11:51 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43359  | M   | 1000 MG/KG/DAY | SPECIAL I        | 07-13-00 | 12:46 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43359  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 05-27-00 | 11:52 | P     | WET YELLOW MATERIAL UROGENITAL AREA   |
| 43346  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 06-20-00 | 12:21 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43359  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 06-20-00 | 12:21 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43359  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 07-13-00 | 12:48 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43359  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 04-27-00 | 11:55 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43359  | M   | 1000 MG/KG/DAY | SPECIAL I        | 04-27-00 | 11:55 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43372  | M   | 1000 MG/KG/DAY | ORAL/DENTAL      | 04-26-00 | 12:31 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43373  | M   | 1000 MG/KG/DAY | EXCRETA          | 05-16-00 | 12:31 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43373  | M   | 1000 MG/KG/DAY | EXCRETA          | 05-27-00 | 11:54 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43373  | M   | 1000 MG/KG/DAY | EXCRETA          | 06-19-00 | 12:06 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43373  | M   | 1000 MG/KG/DAY | EXCRETA          | 06-29-00 | 12:31 | P     | WET YELLOW MATERIAL UROGENITAL AREA   |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PROJECT NO : WIL-186012  
SPONSOR : CMA-BFRIP

A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 04-26-00 TO 07-27-00

| ANIMAL | SEX | GROUP          | CATEGORY       | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|----------------|----------------|----------|-------|-------|---------------------------------------|
| 43397  | M   | 1000 MG/KG/DAY | EXCRETA        | 05-27-00 | 11:55 | P     | WET YELLOW MATERIAL UROGENITAL AREA   |
| 43401  | F   | 1000 MG/KG/DAY | EYES/EARS/NOSE | 07-23-00 | 14:56 | P     | DRIED RED MATERIAL FACIAL AREA        |
| 43430  | F   | 1000 MG/KG/DAY | ORAL/DENTAL    | 06-17-00 | 14:03 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43440  | F   | 1000 MG/KG/DAY | ORAL/DENTAL    | 06-17-00 | 14:03 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43440  | F   | 1000 MG/KG/DAY | SPECIAL I      | 06-04-00 | 13:05 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43440  | F   | 1000 MG/KG/DAY | EYES/EARS/NOSE | 06-24-00 | 12:14 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
| 43460  | F   | 1000 MG/KG/DAY | EYES/EARS/NOSE | 06-26-00 | 12:11 | P     | DRIED YELLOW MATERIAL ANOGENITAL AREA |
| 43460  | F   | 1000 MG/KG/DAY | EXCRETA        | 07-10-00 | 14:34 | P     | CLEAR DISCHARGE RIGHT EYE             |
| 43460  | F   | 1000 MG/KG/DAY | SOFT FECES     | 05-25-00 | 12:01 | P     | SOFT FECES                            |
| 43460  | F   | 1000 MG/KG/DAY | SPECIAL I      | 06-05-00 | 12:00 | P     | SOFT FECES                            |
| 43466  | F   | 1000 MG/KG/DAY | EXCRETA        | 07-25-00 | 14:56 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
| 43477  | F   | 1000 MG/KG/DAY | EXCRETA        | 06-14-00 | 11:38 | P     | WET YELLOW MATERIAL UROGENITAL AREA   |
| 43481  | F   | 1000 MG/KG/DAY | ORAL/DENTAL    | 07-13-00 | 12:50 | P     | WET YELLOW MATERIAL UROGENITAL AREA   |
| 43492  | F   | 1000 MG/KG/DAY | ORAL/DENTAL    | 07-11-00 | 14:04 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43492  | F   | 1000 MG/KG/DAY | ORAL/DENTAL    | 04-27-00 | 11:57 | P     | WET CLEAR MATERIAL VENTRAL NECK       |
| 43492  | F   | 1000 MG/KG/DAY | SPECIAL I      | 04-27-00 | 11:57 | P     | WET CLEAR MATERIAL AROUND MOUTH       |
| 43492  | F   | 1000 MG/KG/DAY | SOFT FECES     | 04-27-00 | 11:57 | P     | WET CLEAR MATERIAL FORELIMB (S)       |
| 43492  | F   | 1000 MG/KG/DAY | SOFT FECES     | 04-27-00 | 11:57 | P     | WET CLEAR MATERIAL VENTRAL TRUNK      |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PCRDrv4.01  
11/30/2000  
R:07/18/2001

PROJECT NO.: WIL-186012  
SPONSOR: CMA-BFRIP

RECOVERY PERIOD  
A 90-DAY ORAL TOXICITY STUDY OF HBCD IN RATS  
INDIVIDUAL CLINICAL OBSERVATIONS  
TABLE RANGE: 07/26/00 TO 08/22/00

| ANIMAL | SEX | GROUP         | CATEGORY      | DATE     | TIME  | GRADE | OBSERVATIONS                          |
|--------|-----|---------------|---------------|----------|-------|-------|---------------------------------------|
| 43311  | M   | 100 MG/KG/DAY | EYES/EAR/NOSE | 08-09-00 | 14:12 | P     | DRIED RED MATERIAL AROUND NOSE        |
| 43340  | M   | 100 MG/KG/DAY | EYES/EAR/NOSE | 07-28-00 | 12:48 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
| 43309  | M   | 300 MG/KG/DAY | EYES/EAR/NOSE | 08-02-00 | 10:32 | P     | DRIED RED MATERIAL AROUND NOSE        |
| 43407  | F   | 100 MG/KG/DAY | EYES/EAR/NOSE | 08-09-00 | 14:12 | P     | RED DISCHARGE RIGHT EYE               |
|        |     |               |               | 08-09-00 | 14:13 | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |               | 08-09-00 | 14:13 | P     | DRIED RED MATERIAL AROUND RIGHT EYE   |
|        |     |               |               | 08-09-00 | 14:13 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |               | 08-12-00 | 14:09 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |               | 08-12-00 | 14:09 | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |               | 08-17-00 | 15:29 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               |               | 08-17-00 | 15:29 | P     | RED DISCHARGE LEFT EYE                |
|        |     |               |               | 08-18-00 | 14:47 | P     | DRIED RED MATERIAL AROUND LEFT EYE    |
|        |     |               | EXCRETA       | 08-03-00 | 10:23 | P     | DEFECATION DECREASED                  |
|        |     |               |               | 08-04-00 | 7:54  | P     | DEFECATION DECREASED                  |
|        |     |               |               | 08-05-00 | 13:09 | P     | PECES SMALLER THAN NORMAL             |
|        |     |               |               | 08-06-00 | 12:14 | P     | DEFECATION DECREASED                  |
|        |     |               | SPECIAL I     | 08-04-00 | 7:54  | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 08-05-00 | 13:09 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 08-06-00 | 12:14 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 08-07-00 | 10:06 | P     | DRIED BROWN MATERIAL ANOGENITAL AREA  |
|        |     |               |               | 08-07-00 | 10:06 | P     | DRIED BROWN MATERIAL UROGENITAL AREA  |
|        |     |               |               | 08-07-00 | 10:06 | P     | DRIED RED MATERIAL FORELIMB(S)        |
|        |     |               |               | 08-08-00 | 14:23 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 08-09-00 | 14:13 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 08-12-00 | 14:09 | P     | DRIED YELLOW MATERIAL UROGENITAL AREA |
|        |     |               |               | 07-28-00 | 12:49 | P     | RED MATERIAL ON CAGE FLOOR            |
|        |     |               |               | 08-14-00 | 8:16  | P     | RECTAL MUCOUS EXUDATE                 |

GRADE CODE: 1 - SLIGHT 2 - MODERATE 3 - SEVERE P - PRESENT

PCRDv4.01  
11/30/2000  
R:07/18/2001

WIL-186012  
CMA-BFRIP

A 90-Day Oral (Gavage) Toxicity  
Study of HBCD in Rats

**APPENDIX L**

Study Protocol



Study Number: WIL-186012

## PROTOCOL AMENDMENT IV

Sponsor: Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association

A. Title of Study:

A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

B. Protocol Modifications:

1) IX. Statistical Methods:

A. Standard Evaluation:

No statistical analysis of FOB and MA data will be performed.

C. Reason for Protocol Modifications:

- 1) After inspection of the data it was determined by the study director that statistical analysis would not be performed.

Approved By:

Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association:

Wendy K. Sherman  
Wendy Sherman  
Sponsor Representative

April 19, 2001  
Date

Prepared By:

WIL Research Laboratories, Inc.

Christopher P. Chengelis, Ph.D., D.A.B.T.  
Christopher P. Chengelis, Ph.D., D.A.B.T.  
Study Director

6 April 01  
Date

WIL RESEARCH LABORATORIES, INC. 1407 GEORGE ROAD ASHLAND, OH 44805-9281 (419) 289-8700 FAX (419) 289-3650

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Study Number: WIL-186012

### PROTOCOL AMENDMENT III

Sponsor: Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association

A. Title of Study:

A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

B. Protocol Modifications:

VIII. Parameters to be Evaluated:

1) J. Anatomic Pathology:

3. Microscopic Evaluation:

The following addition to the protocol is now made. The prostate from the male animals in the Groups 2 and 3, and from all males assigned to the recovery period, will be examined microscopically.

C. Reason for Protocol Modifications:

1) Further evaluation of a potential test article related finding.

Approved By:

Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association:

Wendy K. Sherman  
Wendy Sherman  
Sponsor Representative

February 15, 2001  
Date

Prepared By:

WIL Research Laboratories, Inc.

C. P. Chengelis  
Christopher P. Chengelis, Ph.D., D.A.B.T.  
Study Director

7 Feb 01  
Date

WIL RESEARCH LABORATORIES, INC. 1407 GEORGE ROAD ASHLAND, OH 44805-9281 (419) 289-8700 FAX (419) 289-3650

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Study Number: WIL-186012

**PROTOCOL AMENDMENT II**

Sponsor: Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association

A. Title of Study:

A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

B. Protocol Modifications:

VIII. Parameters to be Evaluated:

1) I. Clinical Pathology (Toxicology Groups Only):

1. Hematology:

Reticulocyte count is deleted from the list of parameters to be examined.

2) Anatomic Pathology (Toxicology Group Only):

3. Microscopic Examination:

Add the following:

The liver, lungs and thyroid glands from both sexes will be evaluated from the low and mid dose groups and from recovery animals.

3) In addition to the work specified in the protocol (and this amendment) the following additional examination of the livers from 5 rats/sex (randomly chosen) from the control and high dosage groups.

Frozen sections of fixed tissue will be prepared and stained with oil red O by PAI (Fredericksburg, MD) and returned to WIL Research. These will be examined by the study pathologist for evidence of lipid accumulation.

Standard section of fixed tissue will be prepared and stained with periodic acid Schiff's reagent (with and without diesterase) by WIL Research. These will be examined by the study pathologist for evidence of glycogen accumulation or depletion.

**WIL-186012**  
**Protocol Amendment II**  
**Page Two**

**C. Reason for Protocol Modifications:**

- 1) As there were no other test article related hematologic effects determination of reticulocyte is not necessary and unwarranted.
- 2) To evaluate potential target organs in the low and mid dose groups and from the recovery groups.
- 3) Additional staining requested by the sponsor for the purposes of exploring a potential test article related effect.

Approved By:

**Brominated Flame Retardant Industry Panel**  
**Chemical Manufacturer's Association:**

Wendy K. Sherman  
Wendy Sherman  
Sponsor Representative

11/6/00  
Date

Prepared By:

**WIL Research Laboratories, Inc.**

Christopher P. Chengelis  
Christopher P. Chengelis, Ph.D., D.A.B.T.  
Study Director

15 Dec 00  
Date





Study Number: WIL-186012

**PROTOCOL AMENDMENT I**

Sponsor: Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association

A. Title of Study:

A 90-Day Oral (Gavage) Toxicity Study of HBCD in Rats

B. Protocol Modification:

I) II. **Personnel Involved in the Study:**

**B. WIL Study Director**

Change to the following:

Christopher P. Chengelis, Ph.D., D.A.B.T.  
Director, Toxicology

**C. WIL Deputy Director**

Change to the following:

Thomas P. O'Neill, B.S.  
Associate Toxicologist

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WIL-186012  
Protocol Amendment I  
Page Two

C. Reason for Protocol Modification:

- 1) Change in study personnel in agreement with the Sponsor.

Approved By:

**Brominated Flame Retardant Industry Panel  
Chemical Manufacturer's Association**

Wendy K. Sherman  
Wendy Sherman  
Sponsor Representative

5/2/00  
Date

Prepared By:

**WIL Research Laboratories, Inc.**

Christopher P. Chengelis, Ph.D., D.A.B.T.  
Christopher P. Chengelis, Ph.D., D.A.B.T.  
Study Director

20 April 00  
Date

Jeannie B. Kirkpatrick  
Jeannie B. Kirkpatrick, M.S.  
Previous Study Director

4/20/00  
Date





Page 1 of 22

WIL-186012  
March 2, 2000

## PROTOCOL

### A 90-DAY ORAL (GAVAGE) TOXICITY STUDY OF HBCD IN RATS

#### Submitted To:

Brominated Flame Retardant  
Industry Panel  
Chemical Manufacturer's Association  
1300 Wilson Blvd.  
Arlington, VA 22209

**WIL Research Laboratories, Inc.**  
1407 George Road  
Ashland, OH 44805-9281

WIL RESEARCH LABORATORIES, INC. 1407 GEORGE ROAD ASHLAND, OH 44805-9281 (419) 289-8700 FAX (419) 289-3650

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**I. Objective:**

The objective of this study is to evaluate the possible toxic effects of the test material when administered orally by gavage to rats for 90 days. This will include evaluation of potential neurotoxicity by functional observational battery (FOB) and motor activity (MA) assessment, evaluation of thyroid hormones, evaluation of reproductive capability and evaluation of adipose tissue for bioaccumulation of test material. Reversibility, persistence, or delayed occurrence, of toxic effects will be evaluated by a 28-day post-treatment recovery period.

This protocol has been designed and the study will be conducted in accordance with The Environmental Protection Agency (EPA) OPPTS Guideline 870.3100 and the Organization for Economic Cooperation and Development (OECD) Guidelines for Testing of Chemicals, Health Effects Test Guidelines, Section 408, adopted September 21, 1998.

The study will be conducted in compliance with the U.S. EPA, 40 CFR Part 792, and the OECD, [C(97)186/Final], Good Laboratory Practice Standards.

**II. Personnel Involved in the Study:****A. Sponsor Representative:**

Ms. Wendy Sherman  
Panel Manager  
Phone: (703) 741-5639  
Fax: (703) 741-6091

**B. WIL Study Director:**

Jeannie B. Kirkpatrick, M.S.  
Staff Toxicologist

**C. WIL Deputy Director:**

Christopher P. Chengelis, Ph.D., D.A.B.T.  
Director, Toxicology

**D. WIL Departmental Responsibilities:**

James L. Schardein, M.S., Fellow A.T.S.  
Sr. Vice President, Director of Research



**Jozef J.W.M. Mertens, Ph.D., D.A.B.T.**  
**Assistant Director, Toxicology**

**Eric L. Padgett, Ph.D.**  
**Staff Toxicologist**

**Gary R. Kiplinger, B.S.**  
**Manager II, General Toxicology**

**Karen S. Regan, D.V.M., D.A.C.V.P., D.A.B.T.**  
**Director, Pathology and Veterinary Medicine**

**Sally A. Keets, A.S.**  
**Manager II, Vivarium**

**Ron E. Wilson, B.S.**  
**Director, Informational Systems**

**Daniel W. Sved, Ph.D.**  
**Director, Metabolism and Analytical Chemistry**

**Deborah A. Shoup, B.S.**  
**Manager I, Developmental,  
Reproductive and Neurotoxicology**

**Theresa M. Rafeld**  
**Group Supervisor, Pharmacy**

**Susan Haley, B.S.**  
**Unit Supervisor – Clinical Pathology**

**Lynn E. Myers, A.S.**  
**Group Supervisor – Histology**

**Loren W. Severs, M.S.**  
**Manager, Analytical Chemistry**

**Charlene A. Weygandt, B.S.**  
**Acting Manager, Technical Report Writing**

**Deborah L. Little, B.S., RQAP-GLP**  
**Manager II, Quality Assurance**



David A. Wilkie, D.V.M., M.S., D.A.C.V.O.  
Consulting Ophthalmologist  
The Ohio State University

**III. Study Schedule:**

Proposed Animal Receipt Date: April 11, 2000  
Proposed Experimental Start Date: April 26, 2000  
Proposed Necropsy Date:  
    Primary: July 26-28, 2000  
    Recovery: August 23, 2000  
Proposed Experimental Termination Date: To be determined.  
Proposed Audited Draft Report Date: December 22, 2000

**IV. Test Material Information:**

A. Identification: Hexabromocyclododecane (HBCD)  
B. Supplier: Wildlife International Limited  
C. Lot Number: Test Substance No. 4615  
D. Purity: Test material is a composite of the commercial HBCD product manufactured by 3 producers. The composition of the test substance is described in the chemical characterization.  
E. Stability: Stability data will be generated concomitantly with the study and provided by Sponsor.  
F. Physical Description: To be documented by WIL Research Laboratories, Inc.  
G. Storage Conditions: Original container (air tight seal) at room temperature, 68° ±4° F, in a dry, well ventilated area.



**H. Reserve Samples:**

Retention samples will be collected and stored in accordance with Standard Operating Procedures.

**I. Personnel Safety Data:**

Latex or nitrile gloves, eye protection, long sleeves (lab coat) and cartridge (organic) respirator with dust filters are to be worn when handling neat material.

**V. Test System:****A. Species:**

Rat

**B. Strain:**

Sprague-Dawley Cri:CD® IGS® BR

**C. Source:**

Charles River Laboratories.  
Portage, MI

**D. Number of Animals:**

One hundred twenty of each sex will be ordered. One hundred males and one hundred females will be placed on study. Females will be nulliparous and non-pregnant.

**E. Approximate Age and Weight:**

Animals will be 4 to 6 weeks of age when received, and 7 to 8 weeks of age at initiation of dosing. Age of the animals will not exceed 8 weeks at initiation of dosing. The males will weigh 200-300g ±20g and the females 150-225g ± 20g at initiation of dosing.

**F. Identification System:**

Each animal will be uniquely identified by a Monel® metal eartag displaying the animal number. Individual cage cards will be affixed to each cage and will display the animal number, group number and study number.

**G. Justification for Selection:**

This species and strain of animal is recognized to be appropriate for subchronic toxicity studies. The Sprague-Dawley rat will be used because it is a widely used strain



for which significant control data are available.

#### **VI. Specific Maintenance Schedule:**

##### **A. Animal Housing:**

Weanling animals (less than 35 days of age) will be housed in an environmentally-controlled room, three per cage by sex in clean, suspended, wire-mesh cages for two to four days following receipt. Thereafter, all animals will be housed individually. The cages will be elevated above cage-board or other suitable material which will be changed at least three times each week.

The facilities at WIL Research Laboratories, Inc. are fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International).

##### **B. Environmental Conditions:**

Controls will be set to maintain temperature at  $72 \pm 5^{\circ}\text{F}$  ( $22 \pm 3^{\circ}\text{C}$ ) and relative humidity at approximately 30-70%. Fluorescent lighting will provide illumination for 12 hours per day. The light/dark period may be interrupted, however, for protocol-specified activities. Temperature and relative humidity will be monitored continuously and recorded once daily. Ventilation rate will be set at 10 to 15 room changes period hour, 100% fresh air.

##### **C. Drinking Water**

Reverse osmosis-treated tap water will be available *ad libitum*. Filters servicing the automatic watering system will be changed regularly according to Standard Operating Procedures. The municipal water supplying the laboratory will be analyzed for contaminants according to Standard Operating Procedures to ascertain that none are present at concentrations that would be expected to affect the outcome of the study.

##### **D. Diet:**

PMI Nutrition International, Inc. Certified Rodent LabDiet<sup>®</sup> 5002 will be offered *ad libitum* during the study. Each lot utilized will be identified and recorded. Analyses of the certified feed for the presence of heavy metals and pesticides will be provided by the manufacturer to ensure that none are present in concentrations that would be expected to affect the outcome of the study. Feeders will be changed and sanitized once per week.



**VII. Experimental Design:****A. Animal Receipt and Acclimation**

Each animal will be inspected by a qualified technician upon receipt (WIL SOP T1-095 and T1-111, as revised). Animals judged to be in good health will be placed immediately in acclimation for at least seven days. All animals will be weighed and assigned a permanent animal number. During the acclimation period, each animal will be observed twice daily for changes in general appearance or behavior. The animals will be allowed a pretreatment week (as part of the acclimation period) during which body weights and food consumption will be recorded and general health will be monitored, but they will not receive the test material. All animals will receive a detailed physical examination (WIL SOP T1-005, as revised) at least one week prior to initiation of dosing and at the time of animal selection for randomization.

**B. Randomization:**

At the conclusion of the acclimation period, animals judged to be suitable for testing will be assigned to groups at random using a computer program. At the time of randomization, the animal body weights will be entered into the WIL Toxicology Data Management System (WTDMSTM). A printout containing the animal numbers and individual group assignments will be generated based on body weight stratification into a block design. Animals will then be arranged into the groups according to the printout. Body weights at randomization will be within  $\pm$  20% of the mean for each sex. If after randomization statistical significant differences between groups exist, new randomizations will be generated until group mean body weights are not statistically different between groups by sex. Following the group randomization procedure, rats assigned to FOB and MA assessment will be randomly assigned to two replicates as described in WIL SOP T1-126, as revised.

**C. Route and Rationale of Test Material Administration:**

The route of administration will be oral by gavage since this route is an acceptable and standard method for administering test material per OECD Guideline 408 and OPPTS 870.3100.



**D. Organization of Test Groups, Dosage Levels and Treatment Regimen:****1. Organization of Test Groups:**

The following diagram presents the study group arrangement.

**Toxicology Groups**

| Group Number | Treatment | Dosage Level (mg/kg/day) | Dosage Volume (ml/kg) | Number of Animals <sup>a</sup> |         |
|--------------|-----------|--------------------------|-----------------------|--------------------------------|---------|
|              |           |                          |                       | Males                          | Females |
| 1            | Vehicle   | 0                        | 5                     | 15                             | 15      |
| 2            | HBCD      | 100                      | 5                     | 15                             | 15      |
| 3            | HBCD      | 300                      | 5                     | 15                             | 15      |
| 4            | HBCD      | 1000                     | 5                     | 15                             | 15      |

**Satellite Groups<sup>b</sup>**

| Group Number | Treatment | Dosage Level (mg/kg/day) | Dosage Volume (ml/kg) | Number of Animals |         |
|--------------|-----------|--------------------------|-----------------------|-------------------|---------|
|              |           |                          |                       | Males             | Females |
| 5            | Vehicle   | 0                        | 5                     | 20                | 20      |
| 6            | HBCD      | 1000                     | 5                     | 20                | 20      |

- <sup>a</sup> - The first five animals/sex in each group will be assigned to the neurotoxicity evaluations (FOB and MA) and will also be assigned to the 28-day recovery period.
- <sup>b</sup> - Animals to be used for the collection of tissues to be used for special analyses.

**2. Vehicle:**

The vehicle for the test material will be Mazola® corn oil (Best Foods, Englewood Cliffs, NJ). Source and lot information will be documented in the raw data.

**3. Treatment Regimen:**

The test material and vehicle will be administered once daily at approximately the same time each day seven days per week for a minimum of 90 days (until the day prior to necropsy). A dosage volume of 5 ml/kg will be used. The first day of dosing is Day 0; the first week of dosing is Week 0. Day 90 will be the first day of primary necropsy and the first day of the recovery period.



**4. Adjustment of Doses:**

Individual doses will be adjusted weekly for the duration of the study, based on the most recent body weights. Adjusted doses will become effective the day after collection of the weekly body weights.

**E. Preparation of Test Material:**

The test material will be prepared for dosing as weight-to-volume mixtures in the vehicle using routine methods weekly or at an appropriate frequency based upon the stability evaluations. A complete description of the method of test material preparation will be documented in the study records and described in the final report. The materials dispensed for daily dosing will be stored at room temperature and will be maintained on a magnetic stir plate throughout dosing in order to ensure homogeneity of suspension.

**F. Analysis of Test Material Preparations:****1. Stability of Test Material in Bulk Storage:**

Storage stability of the neat test material will be determined concomitantly with the study. At initiation of dosing and termination of dosing (approximately days 0 and 91), a (1 gram, approximately) sample of the bulk test material will be forwarded to

Paul Ranken, Ph.D.  
Albemarle Corporation  
Albemarle Technical Center  
800 GSRI Avenue  
Baton Rouge, LA 70898  
Tel: (225) 768-5877

for verification of identity. Samples for the determinations will be provided and shipped frozen on dry ice by WIL Research Laboratories.

Albemarle Corporation will be responsible for preparing a report of the results of the analyses that will be included in the toxicology report as an appendix. The Quality Assurance Unit of Albemarle Corporation will be responsible for reviewing the data, inspecting the laboratory, reviewing the prepared report and reporting the results to the study director.



**2. Homogeneity:**

Prior to initiation of dosing, homogeneity and stability of the test material in the vehicle will be established by WIL Research using a validated HPLC method for the lowest and highest concentrations to be used. Test material preparations of sufficient volume for dosing the low and high dose groups for one week will be prepared. Samples will be taken from the top, middle and bottom of each of these preparations and analyzed for homogeneity. A sample from the middle of each formulation will be stored under laboratory conditions for 10 days. These samples will be analyzed for stability. In addition, the remainder of each preparation will be subdivided into seven aliquots and stored at room temperature. Following storage for 10 days and resuspension using the same procedures to be used for animal dosing, samples taken from the top and bottom of the last daily aliquot from each preparation will be analyzed to confirm homogeneity in a dosing aliquot.

**3. Determination of Test Material Concentrations:**

Dosage preparations (including control) will be verified for test material concentration by WIL Research Laboratories using a validated HPLC method during weeks 0, 1, 2, 3, 7 and 12.

**G. Test Material Disposition:**

Upon completion of the in-life phase of the study, remaining (unused) test material will be returned to the Sponsor.

**VIII. Parameters to be Evaluated:****A. Viability Observations (All Groups):**

All animals will be observed for mortality/moribundity twice daily, once in the morning and once in the afternoon. Moribund animals will be euthanized to ensure that tissues will not be lost due to autolysis.

**B. Clinical Observations (Toxicology Groups Only):****1. Daily Observations:**

A clinical examination will be performed once daily for all animals, one to two hours after dosing. Observations will include, but are not limited to, changes in the skin, fur, eyes and mucous membranes; respiratory, circulatory, autonomic and central nervous systems function; somatomotor activity and behavior patterns. Findings noted at the clinical examination



will be recorded for individual animals; the condition of animals without signs will be documented in a general comment.

During the recovery period, observations will be conducted once per day.

**2. Detailed Physical Examinations:**

All animals will receive a detailed physical examination weekly, beginning one week prior to test material administration and ending just prior to the scheduled necropsy. The animals will be removed from their home cages and placed in a standard arena for observation. Observations will be detailed and carefully recorded. Where appropriate, explicitly defined scoring systems will be used if, in the opinion of the study director, doing so increases the utility of the data. Signs noted shall include, but are not limited to, changes in skin, fur, eyes, mucous membranes, occurrence of secretions and excretions and autonomic activity (e.g., lacrimation, piloerection, pupil size, unusual respiratory pattern). Changes in gait, posture and response to handling, as well as the presence of clonic or tonic movements, stereotypes (e.g., excessive grooming, repetitive circling) or bizarre behavior (e.g., self-mutilation, walking backwards) will be recorded. Signs such as skin lesions and hair loss will also be recorded at this time. The absence or presence of findings will be recorded for individual animals.

**C. Individual Body Weights (All Groups):**

Individual body weights will be recorded weekly, beginning one week prior to test material administration and just prior to the scheduled necropsy.

**D. Individual Food Consumption (Toxicology Groups Only):**

Individual food consumption will be recorded weekly, beginning one week prior to test material administration.

**E. Ophthalmic Examinations (Toxicology Groups Only):**

A board-certified veterinary ophthalmologist, using an indirect ophthalmoscope (or other equivalent suitable equipment), will examine all animals. An appropriate mydriatic agent will be administered prior to the examination. The examinations will be performed before initiation of dosing, near the end of the dosing period and near the end of the recovery period.



**F. Vaginal Cytology (Toxicology Groups Only):**

Vaginal smears will be collected daily from all females on study from Day 69 through the last primary necropsy day for females. Smears will be examined microscopically to determine the stage of estrus based on the cell types observed. The duration of the estrous cycle will be determined. This will be repeated during the last two weeks of the recovery period if a test article-related effect on estrus is observed.

**G. Functional Observational Battery (Toxicology Groups Only):**

Functional Observational Battery (FOB) evaluations will be performed on 5 animals/sex/group pre-study, during the last week of the test material administration period (prior to the daily dosage administration) and during the last week of the recovery period. The same animals will be used for the appropriate time points. Testing will be performed by the same trained technicians, wherever possible, who will not know the animal's group assignment. Animals will be observed for the following as described below (see WIL Research Laboratories, Inc., SOP No. T1-112, (as revised), for a description of scoring criteria):

**1. Home Cage Observations:**

|                     |                            |
|---------------------|----------------------------|
| Posture             | Biting                     |
| Convulsions/tremors | Palpebral (eyelid) closure |
| Feces consistency   |                            |

**2. Handling Observations:**

|                               |                                 |
|-------------------------------|---------------------------------|
| Ease of removal from cage     | Ease of handling animal in hand |
| Lacrimation/Chromodacryorrhea | Salivation                      |
| Piloerection                  | Fur appearance                  |
| Palpebral closure             | Respiratory rate/character      |
| Red/Crusty deposits           | Mucous membranes/eye/skin       |
| Eye prominence                | Color                           |
|                               | Muscle tone                     |



**3. Open Field Observations (evaluated over a 2 minute observation period):**

|                              |                      |
|------------------------------|----------------------|
| Mobility                     | Gait                 |
| Rearing                      | Arousal              |
| Convulsions/tremors          | Urination/defecation |
| Grooming                     | Gait score           |
| Bizarre Stereotypic behavior | Backing              |
| Time to first step (seconds) |                      |

**4. Sensory Observations:**

|                     |                       |
|---------------------|-----------------------|
| Approach response   | Touch response        |
| Startle response    | Tail pinch response   |
| Pupil response      | Eyeblink response     |
| Forelimb extension  | Hindlimb extension    |
| Air righting reflex | Olfactory orientation |

**5. Neuromuscular Observations:**

|                            |                                 |
|----------------------------|---------------------------------|
| Hindlimb extensor strength | Grip strength-hind and forelimb |
| Hindlimb foot splay        | Rotarod performance             |

**6. Physiological Observations:**

|                  |             |
|------------------|-------------|
| Catalepsy        | Body weight |
| Body temperature |             |

**H. Locomotor Activity (Toxicology Groups Only):**

Observations will be made on 5 animals/sex/group pre-study and during the last week of the test material administration period (prior to daily dosage administration) and during the last week of the recovery period. Testing of treatment groups will be performed by appropriately trained technicians. Locomotor Activity will be measured using the SDI Photobeam Activity System (San Diego Instruments, San Diego, CA) as described in WIL Research Laboratories, Inc., SOP No. T1-185, as revised. The test session will be of 60 minutes duration and will consist of twelve 5-minute intervals. Locomotor activity measures evaluated are total and ambulatory activity counts obtained for the 60 minute test session.

All FOB and Locomotor Activities sessions will be performed in a sound proofed room equipped with a white noise generation system set to operate at 70



db (see WIL Research SOP No. T1-124, as revised) to minimize environmental variations in the test conditions.

**I. Clinical Pathology (Toxicology Groups Only):**

The following clinical pathology parameters will be evaluated at approximately one month (5/sex/group), at the end of the dosing period (10/sex/group in conjunction with primary necropsy) and at the end of the recovery period (5/sex/group in conjunction with the recovery necropsy). The animals will be fasted overnight before taking blood samples. Blood will be collected from the lateral tail vein of unanesthetized animals at the one month evaluation and prior to necropsy (except where noted below).

**1. Hematology:**

|                                                    |                               |
|----------------------------------------------------|-------------------------------|
| Activated partial thromboplastin time <sup>a</sup> | MCHC                          |
| Differential leucocyte count                       | MCV                           |
| Erythrocyte count                                  | Platelet count <sup>a</sup>   |
| Hematocrit                                         | Prothrombin time <sup>a</sup> |
| Hemoglobin                                         | Reticulocyte count            |
| MCH                                                | Total leukocyte count         |

<sup>a</sup> = Terminal evaluation only, blood collected from the vena cava after euthanasia.

**2. Serum Chemistry:**

|                            |                   |
|----------------------------|-------------------|
| A/G ratio                  | Globulin          |
| Alanine aminotransferase   | Glucose           |
| Albumin                    | Phosphorus        |
| Alkaline phosphatase       | Potassium         |
| Aspartate aminotransferase | Sodium            |
| Calcium                    | Total bilirubin   |
| Chloride                   | Total cholesterol |
| Creatinine                 | Total protein     |
| Gamma glutamyltransferase  | Urea nitrogen     |

**3. Serum Hormone:**

|                |
|----------------|
| TSH            |
| T <sub>3</sub> |
| T <sub>4</sub> |



**4. Urinalysis:**

Each animal will be removed from its home cage, verifying each animal's identification with cage card and the urine specimen vessel, and placed into metabolism caging equipped with a water bottle. A fine wire-mesh screen will be placed between the caging and the collection trough (funnel) to prevent contamination of the urine specimen from fecal material. The urine specimen vessel, containing a preservative, will be placed under the funnel end of the collection trough. After the animals remain in the metabolism caging overnight prior to blood sampling, the specimen vessel will be covered and transferred to the Clinical Pathology Laboratory. If analysis cannot be performed immediately, the specimens will be refrigerated.

|                        |                  |
|------------------------|------------------|
| Bilirubin              | Occult blood     |
| Color and appearance   | pH               |
| Glucose                | Protein          |
| Ketones                | Specific gravity |
| Leukocytes             | Urobilinogen     |
| Microscopy of sediment | Volume           |
| Nitrites               |                  |

**J. Anatomic Pathology (Toxicology Groups Only):****1. Macroscopic Examination:**

A complete necropsy will be conducted on all animals. Animals will be euthanized by carbon dioxide asphyxiation followed by exsanguination. Necropsy will include examination of the external surface, all orifices and the cranial, thoracic, abdominal and pelvic cavities including viscera. At the time of necropsy, the following tissues and organs will be collected and placed in 10% neutral buffered formalin (except as noted):



|                                                                |                                                |
|----------------------------------------------------------------|------------------------------------------------|
| Adrenals (2)                                                   | Mammary gland (females only)                   |
| Aorta                                                          | Ovaries with oviducts (2)                      |
| Bone with marrow                                               | Pancreas                                       |
| Sternebrae                                                     | Peripheral nerve (sciatic)                     |
| Bone marrow smear <sup>a</sup>                                 | Pituitary                                      |
| Brain                                                          | Prostate                                       |
| Forebrain                                                      | Salivary glands [mandibular (2)]               |
| Midbrain                                                       | Seminal vesicles (2)                           |
| Hindbrain                                                      | Skeletal muscle (vastus medialis)              |
| Epididymides (2) <sup>b,d</sup>                                | Skin                                           |
| Eyes with optic nerves (2) <sup>c</sup>                        | Spinal cord                                    |
| Gastrointestinal tract                                         | Cervical                                       |
| Esophagus                                                      | Midthoracic                                    |
| Stomach                                                        | Lumbar                                         |
| Duodenum                                                       | Spleen                                         |
| Jejunum                                                        | Testes (2) <sup>b,d</sup>                      |
| Ileum                                                          | Thymus                                         |
| Cecum                                                          | Thyroids [with parathyroids<br>if present (2)] |
| Colon                                                          | Trachea                                        |
| Rectum                                                         | Urinary bladder                                |
| Heart                                                          | Uterus with cervix                             |
| Kidneys (2)                                                    | Vagina                                         |
| Liver (sections of two lobes)                                  | Vas deferens (2)                               |
| Lungs (including bronchi, fixed by<br>inflation with fixative) | All gross lesions (when possible)              |
| Lymph node                                                     |                                                |
| Mesenteric                                                     |                                                |
| Submandibular                                                  |                                                |

<sup>a</sup> = Not taken from animals found dead. Not placed in formalin; to be examined only if scientifically warranted.

<sup>b</sup> = See section VIII.K (Spermatogenesis Evaluations).

<sup>c</sup> = Fixed in Davidson's solution.

<sup>d</sup> = Testis and epididymis (right only) will be fixed in Bouin's solution. Transverse sections of 2-4 microns will be made for the testis and longitudinal sections for the epididymis. PAS and hematoxylin staining will be used for the right testis and epididymis. The following regions of the epididymis will be embedded: caput, corpus, and cauda.

## 2. Organ Weights:

The following organs from all animals euthanized at the scheduled necropsies will be weighed.



|                                  |                             |
|----------------------------------|-----------------------------|
| Adrenals                         | Ovaries (with oviducts)     |
| Brain                            | Prostate                    |
| Epididymides** (total and cauda) | Spleen                      |
| Heart                            | Testes**                    |
| Kidneys                          | Thymus                      |
| Liver                            | Thyroids with parathyroids* |
|                                  | Uterus and cervix           |

Paired organs will be weighed together. Designated (\*\*) paired organs will be weighed separately. Designated (\*) organs will be weighed after fixation. Organ to final body weight and organ to brain weight ratios will be calculated from animals at the scheduled necropsies.

### 3. Microscopic Examination:

All tissues listed in protocol section VIII.J.1. will be processed to paraffin blocks. Microscopic examination of hematoxylin-eosin stained paraffin sections will be performed on all gross lesions in all animals and all tissues listed in protocol section VIII.J.1. from all animals scheduled at the primary necropsy in the control (Group 1) and high dose (Group 4) groups, and from all rats that die or are euthanized *in extremis*. Microscopic examination will be extended to the mid and low dose and recovery groups (Sponsor request, additional cost) if a potential target organ is noted based on histopathological examination of tissues from the high dose group. Special stains may be used at the discretion of the pathologist to further characterize lesions and changes. Any special stains used will be documented in the individual animal data and interpretation of results will be included in the final report.

## K. Spermatogenesis Evaluations (Toxicology Groups Only):

The following quantitative assessment of the process of spermatogenesis will be performed on all males at study termination.

### 1. Motility/Viability Assessment:

Immediately after euthanasia, the reproductive tract of the male will be exposed via a ventral mid-line incision. The right epididymis will be excised and weighed separately. An incision will be made in the distal region of the right cauda epididymis, and the cauda will be placed in a beaker containing Dulbecco's phosphate buffered saline (maintained at approximately 37°C) with 10 mg/ml Bovine Serum Albumin (BSA). A small sample of the diluted sperm will be loaded into a 100-μm chamber for determination of motility. Because sperm motility can be affected by temperature shock, all slides and diluents will be pre-warmed in an incubator, and motility



determinations will be performed under constant temperature (approximately 37°C) using the Hamilton-Thorne HTM-IVOS Version 10 computer-assisted sperm analysis (CASA) system. Analysis of at least 200 motile and nonmotile spermatozoa per animal in all exposure groups will be performed by the analyzer. The motility score will be reported.

The right testis and epididymis will then be preserved for subsequent microscopic examination in accordance with Section VIII.J.1.d.

**2. Morphology Assessment:**

Sperm morphology will be evaluated by a modification of the wet-mount evaluation technique described by Linder *et al.*(4). Abnormal forms of sperm, from a differential count of 200 spermatozoa per animal in all groups, will be recorded.

**3. Enumeration of Epididymal and Testicular Sperm Numbers and Sperm Production Rate (SPR):**

The left testis and epididymis will be weighed, homogenized and evaluated for sperm numbers and the sperm production rate will be calculated utilizing the method described by Blazak *et al.*(1) and the Hamilton-Thorne CASA system. The homogenized sample will be mixed with a DNA-specific fluorescent dye to allow identification of the sperm under fluorescent illumination. The right testis and epididymis will be preserved in Bouin's fixative for subsequent microscopic examination as described in Section VIII.J.1.d.

**L. Determination of Test Article Concentration (Satellite Groups):**

**1. Omental Fat:**

On Study Days 2, 6, 9, 13, 20, 27, 55, 89, 104 and 118, 2 rats/sex for each of the satellite groups will be euthanized by CO<sub>2</sub> asphyxiation. Immediately upon euthanasia, 2 to 3 ml of blood will be collected from the vena cava and placed in clot tubes for serum preparation. After the blood samples are collected, 1 to 2 grams of fat (mesenteric and/or omental) will be collected. Perirenal fat will be collected if necessary to obtain a sample of sufficient size. Samples will be frozen in liquid nitrogen and stored at approximately -70°C until being shipped for determination of test article concentration. After the last samples have been collected, they will be shipped overnight on dry ice to David Palmer, Wildlife International. Wildlife International will prepare a report of the results of the analyses for inclusion in the final report.



**Address for shipment:**

Wildlife International, Ltd.  
8615 Brooks Drive  
Easton, MD 21601  
Tel: (410) 822-8600

The Quality Assurance Unit of Wildlife International will be responsible for reviewing the data, inspecting the laboratory, reviewing the prepared report and reporting the results to the study director.

**2. Serum Analysis:**

Serum samples will be frozen at approximately -20°C for potential analysis of the test article or bromide concentration. The decision to perform analyses will be documented in an amendment. If not analyzed, samples will be discarded upon release of the final report.

Satellite animals found dead or euthanized *in extremis* (CO<sub>2</sub> asphyxia) will be subjected to a gross necropsy only to attempt to determine the possible cause of death.

**IX. Statistical Methods:**

**A. Standard Evaluation:**

All analyses will be two-tailed for a significance level of 5% and 1%. All means will be presented with standard deviations. All statistical tests will be performed by a Digital Equipment Corporation Computer with appropriate programming. Body weights, body weight changes, food consumption, estrous cycle, clinical pathology values (excluding differential white cell counts other than lymphocytes and segmented neutrophils), and absolute and relative organ weights (from animals euthanized at the scheduled necropsies) will be subjected to a one-way analysis of variance (ANOVA) (2). A comparison of the control group to each test article-treated group by Dunnett's test(3) will follow if the ANOVA shows statistical significance. Statistical comparisons will not be made when the group size is 2 or less.

Statistical analysis of FOB and MA data will be determined after inspection of the data and documented in a protocol amendment.



**B. Spermatogenic Endpoint Evaluation:**

The percentage of motile spermatozoa and percentage of sperm with normal morphology will be analyzed by the Kruskal-Wallis nonparametric ANOVA test (2) followed by the Mann-Whitney U-Test (2). Epididymal and testicular sperm numbers and sperm production rates will be analyzed by a parametric ANOVA test (2) and Dunnett's test (3) as described above.

**X. Quality Assurance:**

The study will be audited by the WIL Quality Assurance Unit while in progress to assure compliance with Good Laboratory Practice regulations, adherence to the protocol and to WIL Standard Operating Procedures. The raw data and draft report will be audited by the WIL Quality Assurance Unit to assure that the final report accurately describes the conduct and the findings of the study. Albemarle Corporation will be responsible for the GLP compliance of the bulk test material stability analysis. Wildlife International will be responsible for the GLP compliance of the data generated there.

This study is an EPA-regulated study and will be included on the WIL master list of regulated studies.

**XI. Records to be Maintained:**

All original raw data records, as defined by WIL SOPs and the applicable GLPs, will be stored as described in protocol Section XII. in the Archives at WIL Research Laboratories, Inc.

**XII. Work Product:**

Sponsor will have title to all documentation records, raw data, slides, specimens, or other work product generated during the performance of the study. All work product including raw paper data, magnetically encoded records and specimens will be retained at no charge for a period of 5 years following issuance of the final report in the Archives at WIL Research Laboratories, Inc. Thereafter, WIL Research Laboratories will charge a monthly archiving fee for retention of all work product. All work product will be stored in compliance with regulatory requirements.

**XIII. Reports:**

The final report will contain a summary, test material data, methods and procedures, appropriate individual animal and summary data tables, a copy of the protocol and amendments (if any) and an interpretation and discussion of the study results. The report will contain all information necessary to conform with current EPA OPPTS



and OECD specifications. The report will be comprehensive and shall attempt to define toxicity and the no-observed-effect level(s) under the conditions of this investigation.

WIL Research Laboratories will provide one (1) copy of an Audited Draft Report, submitted in a timely manner upon completion of the study prior to issuance of the final report. One (1) revision will be permitted as part of the cost of the study, from which Sponsor's reasonable revisions and suggestions will be incorporated into the Final Report as appropriate. Additional changes or revisions may be made, at extra cost. It is expected that the Sponsor will review the draft report and provide comments to WIL within a two (2) month time frame following submission. WIL will submit the Final Report within one (1) month following receipt of comments. Five (5) copies of the Final Report (4 bound, 1 unbound) will be provided; requests for additional copies of the Final Report may result in additional charges.

#### XIV. Protocol Modification:

Modification of the protocol may be accomplished during the course of this investigation. However, no changes will be made in the study design without the verbal or written permission of the Sponsor. In the event that the Sponsor verbally requests or approves changes in the protocol, such changes will be made by appropriate documentation in the form of protocol amendments. All alterations of the protocol and reasons for the modification(s) will be signed by the Study Director.

#### XV. Animal Welfare Act Compliance:

This study will comply with all applicable sections of the Final Rules of the Animal Welfare Act regulations (9 CFR). The Sponsor should make particular note of the following:

- The Sponsor signature on this protocol documents for the Study Director the Sponsor's assurance that the study described does not unnecessarily duplicate previous experiments
- Whenever possible, procedures used in this study have been designed to avoid or minimize discomfort, distress or pain to animals. All methods are described in this study protocol or in written laboratory Standard Operating Procedures.
- Animals that experience severe or chronic pain or distress that cannot be relieved will be painlessly euthanized, as deemed appropriate by the veterinary staff and Study Director. The Sponsor will be advised by the Study Director of all circumstances which could lead to this action, in as timely a manner as possible.



- Methods of euthanasia used during this study are in conformance with the above-referenced regulation.

**XVI. References:**

1. Blazak, W.F., Ernst, T.L. and Stewart, B.E. (1985) Potential indicators of reproductive toxicity: Testicular sperm production and epididymal sperm number, transit time and mortality in Fischer 344 rats. *Fundam. and Appl. Toxicol.* 5: 1097-1103.
2. BMDP-79 *Biomedical Computer Program* (Dixon W.J., And Brown, M.B., eds), University of California Press, Berkeley, CA, pp. 188, 612, 780.
3. Dunnett, C.W. (1964) New Tables for Multiple Comparisons with a Control. *Biometrics*, 20:482-491, CA, pp. 188, 612.
4. Linder, R.E., Strader, L.F., Slott, V.L. and Suarex, J.D. (1992) Endpoints of spermatotoxicity in the rat after short duration exposures to fourteen reproductive toxicants. *Reprod. Toxicol.* 6:491-505.

**XVII. Protocol Approval:**

Chemical Manufacturer's Association  
Brominated Flame Retardant Industry Panel

Wendy K. Sherman

Wendy Sherman  
Sponsor Representative

3/21/00

Date

WIL Research Laboratories, Inc.

Jeannie B. Kirkpatrick

Jeannie B. Kirkpatrick, M.S.  
Study Director

3/21/00

Date

Christopher P. Chengelis

Christopher P. Chengelis, Ph.D., D.A.B.T.  
Director, Toxicology

2 March 00

Date

